UNIVERSITY OF ARIZONA
39001007448593

THE DEVELOPMENT OF GOVERNMENTAL FOREST CONTROL IN THE UNITED STATES

THE INSTITUTE FOR GOVERNMENT RESEARCH

Washington, D. C.

The Institute for Government Research is an association of citizens for coöperating with public officials in the scientific study of government with a view to promoting efficiency and economy in its operations and advancing the science of administration. It aims to bring into existence such information and materials as will aid in the formation of public opinion and will assist officials, particularly those of the national government, in their efforts to put the public administration upon a more efficient basis.

To this end, it seeks by the thoroughgoing study and examination of the best administrative practice, public and private, American and foreign, to formulate those principles which lie at the basis of all sound administration, and to determine their proper adaptation to the specific needs of our public administration.

The accomplishment of specific reforms the Institute recognizes to be the task of those who are charged with the responsibility of legislation and administration; but it seeks to assist, by scientific study and research, in laying a solid foundation of information and experience upon which such reforms may be successfully built.

While some of the Institute's studies find application only in the form of practical coöperation with the administration officers directly concerned, many are of interest to other administrators and of general educational value. The results of such studies the Institute purposes to publish in such form as will insure for them the widest possible utilization.

Officers

Robert S. Brookings, Chairman

Harold G. Moulton, Vice-Chairman

Frederic A. Delano, Treasurer

Trustees

Robert S. Brookings
Frederic A. Delano
George Eastman
Raymond B. Fosdick
Frank J. Goodnow
Jerome D. Greene
Vernon Kellogg
John C. Merriam
Harold G. Moulton
L. S. Rowe

Director

W. F. Willoughby

Editor

F. W. Powell

INSTITUTE FOR GOVERNMENT RESEARCH

STUDIES IN ADMINISTRATION

THE DEVELOPMENT OF GOVERNMENTAL FOREST CONTROL IN THE UNITED STATES

BY

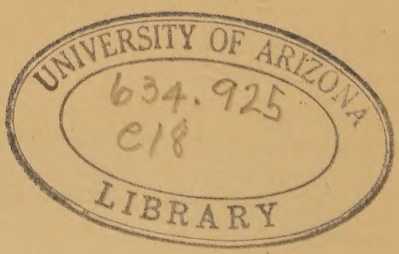
JENKS CAMERON

THE JOHNS HOPKINS PRESS

BALTIMORE MARYLAND

1928

The Lord Baltimore Press
BALTIMORE, MD., U. S. A.



PUBLICATIONS OF THE INSTITUTE FOR GOVERNMENT RESEARCH

STUDIES IN ADMINISTRATION.

The System of Financial Administration of Great Britain.
By W. F. Willoughby, W. W. Willoughby, and S. M. Lindsay. 378 pp. $3.

The Budget: A Translation.
By René Stourm. 648 pp. $4.

The Canadian Budgetary System.
By H. C. Villard and W. W. Willoughby. 390 pp. $3.

The Problem of a National Budget.
By W. F. Willoughby. 234 pp. $3.

The Movement for Budgetary Reform in the States.
By W. F. Willoughby. 266 pp. $3.

Teachers' Pension Systems in the United States.
By Paul Studensky. 474 pp. $3.

Organized Efforts for the Improvement of Methods of Administration in the United States.
By Gustavus A. Weber. 408 pp. $3.

The Federal Service: A Study of the System of Personnel Administration of the United States Government.
By Lewis Mayers. 624 pp. $5.

The Reorganization of the Administrative Branch of the National Government.
By W. F. Willoughby. 314 pp. $3.

The Development of National Administrative Organization in the United States.
By Lloyd M. Short. 531 pp. $5.

The Statistical Work of the National Government.
By Laurence F. Schmeckebier. 590 pp. $5.

Manual of Accounting and Reporting for the Operating Services of the National Government.
By Henry P. Seidemann. 421 pp. $5.

The National Government and Public Health.
By James A. Tobey. 441 pp. $3.

The National Budget System, with Suggestions for Its Improvement.
By W. F. Willoughby. 359 pp. $3.

The Department of Justice of the United States.
By Albert Langeluttig. 334 pp. $3.

The Legal Status and Functions of the General Accounting Office.
By W. F. Willoughby. 204 pp. $3.

The District of Columbia; its Government and Administration.
By Laurence F. Schmeckebier. 963 pp. $5.

The Problem of Indian Administration.
By Lewis Meriam and Associates. 894 pp. $5.

The Development of Governmental Forest Control in the United States.
By Jenks Cameron. 480 pp. $3.

Manual of Accounting, Reporting, and Business Procedure for the Territorial Government of Hawaii.
By Henry P. Seidemann. (In Press.)

The Government and Administration of Germany.
By Frederick F. Blachly and Miriam E. Oatman. (In Press.)

PRINCIPLES OF ADMINISTRATION.

Principles Governing the Retirement of Public Employees.
By Lewis Meriam. 508 pp. $3.

Principles of Government Purchasing.
By Arthur G. Thomas. 290 pp. $3.

Principles of Government Accounting and Reporting.
By Francis Oakey. 582 pp. $5.

Principles of Public Personnel Administration.
By Arthur W. Procter. 256 pp. $3.

Principles of Public Administration.
By W. F. Willoughby. 742 pp. $5.

96203

PUBLICATIONS OF THE INSTITUTE FOR GOVERNMENT RESEARCH

SERVICE MONOGRAPHS OF THE UNITED STATES GOVERNMENT.

The Geological Survey. 174 pp. Out of print.
The Reclamation Service. 190 pp. Out of print.
The Bureau of Mines. 174 pp. $1.
The Alaskan Engineering Commission. 134 pp. $1.
The Tariff Commission. 84 pp. $1.
The Federal Board for Vocational Education. 86 pp. $1.
The Federal Trade Commission. 92 pp. $1.
The Steamboat-Inspection Service. 142 pp. $1.
The Weather Bureau. 100 pp. $1.
The Public Health Service. 312 pp. $2.
The National Park Service. 184 pp. $1.
The Employees' Compensation Commission. 98 pp. $1.
The General Land Office. 236 pp. $1.50.
The Bureau of Education. 172 pp. $1.
The Bureau of Navigation. 136 pp. $1.
The Coast and Geodetic Survey. 120 pp. $1.
The Federal Power Commission. 138 pp. $1.
The Interstate Commerce Commission. 182 pp. $1.
The Railroad Labor Board. 96 pp. $1.
The Division of Conciliation. 48 pp. $1.
The Children's Bureau. 95 pp. $1.
The Women's Bureau. 44 pp. $1.
The Office of the Supervising Architect. 150 pp. $1.
The Bureau of Pensions. 150 pp. $1.
The Bureau of Internal Revenue. 283 pp. $1.50.
The Bureau of Public Roads. 134 pp. $1.
The Office of the Chief of Engineers. 178 pp. $1.
The United States Employment Service. 142 pp. $1.
The Bureau of Foreign and Domestic Commerce. 192 pp. $1.
The Bureau of Immigration. 260 pp. $1.50.
The Patent Office. 139 pp. $1.
The Office of Experiment Stations. 190 pp. $1.
The Customs Service. 203 pp. $1.50.
The Federal Farm Loan Bureau. 171 pp. $1.
The Bureau of Standards. 314 pp. $2.
The Government Printing Office. 155 pp. $1.
The Bureau of the Mint. 102 pp. $1.
The Office of the Comptroller of the Currency. 96 pp. $1.
The Naval Observatory. 113 pp. $1.
The Lighthouse Service. 170 pp. $1.
The Bureau of Animal Industry. 202 pp. $1.50.
The Hydrographic Office. 124 pp. $1.
The Bureau of Naturalization. 120 pp. $1.
The Panama Canal. 430 pp. $2.50.
The Medical Department of the Army. 173 pp. $1.50.
The General Accounting Office. 227 pp. $1.50.
The Bureau of Plant Industry. 133 pp. $1.
The Office of Indian Affairs. 605 pp. $3.
The United States Civil Service Commission. 165 pp. $1.50.
The Food, Drug, and Insecticide Administration. 146 pp. $1.50.
The Coast Guard. (In Press.)
The Bureau of Chemistry and Soils. (In Press.)
The Bureau of the Census. (In Press.)

PREFACE

There is an intimate reciprocal relation between economic and social conditions on the one hand and governmental action on the other. The former determines in large part the character of the problems presented to governments for solution, and the latter's action, in seeking a solution of these problems, reacts upon and modifies original conditions, often in a profound way. The influences of the possession by the national government of the United States of a vast public domain and the resulting frontier, as the population moved westward for its occupation and exploitation, has long been a favorite theme of the American historian. Great as has been the attention paid to this subject, it has remained to the author of the present work to point out in any adequate way the influence of one phase, and that an exceedingly important one, of this basic condition determining American thought and life. The fact that this domain was to a considerable extent covered by a forest which, viewed from the present-day standpoint, was of incalculable value, and that this forest has been largely destroyed in the settlement of the country, is a matter of tremendous significance.

To many this destruction is not only a matter of regret, but also an indictment of the government that permitted it. With this position the author takes sharp issue. In a striking way and with a peculiar vividness of style, he carries the reader back to early times, points out the conditions confronting a people that was hewing out a new empire from the wilderness, and, from that starting point, traces the evolution of opinion from the early belief in the inexhaustibility of forest resources to the modern conception of conservation. Especially does he emphasize the influence of the forest and its free utilization in developing the pioneer type, with its great qualities of individual initiative, self-reliance, and willingness to confront hardship and danger, and questions whether a too-early attempt to subject this class to the restrictive action of governmental control would not have tended to deprive America of the possession of a class of citizens that has been one of its most valued assets, and have interfered materially with the development of the country.

The story of the conflict between the two principles of freedom and control runs throughout and dominates the narrative. It is the peculiar merit of the author that he has been able to view this conflict in proper perspective and to appreciate the influence of changing conditions as affecting the extent to which one or the other of these principles should actuate public policy. Greatly as he stresses the benefits of freedom of action in early times when a wilderness was being conquered, he sees as clearly as the most ardent conservationist that the time has now come when, not only safeguards should be set up against a wasteful destruction of existing forests, but affirmative efforts, through afforestation, be made to put back into forests, cut-over lands suitable only for that purpose.

In respect to this modern phase he recognizes, however, that, just as in the past the great issue was one of freedom versus control, so now there is a similar issue between those advocating that governmental action shall be pushed to the extreme of subjecting the whole forest industry, if not to government ownership, at least to a control comparable to that now exercised by the government over the operation of railroads, and those holding that the industry should remain, as it now chiefly is, a private enterprise; and that the efforts of the government should be largely directed to aiding and coöperating with private owners to conduct their operations in a way that will promote the general welfare and protect future generations as well as secure a reasonable return to existing owners.

No one can read this volume without appreciating that the author has made a valuable contribution, not only to the history of forest development in this country, but also to the history of the American people generally, and that he has done so in a way to make his story one of unusual readability.

W. F. Willoughby.

CONTENTS

CHAPTER		PAGE
I.	The Legend of Inexhaustibility	1
II.	The Broad Arrow	10
III.	Santa Rosa	28
IV.	Irish Apothecaryism	68
V.	The Era of Magnificent Plundering	100
VI.	Adventure's Heyday	119
VII.	The Growth of Order	158
VIII.	Governmental Recognition	179
IX.	The Era of Magnificent Indignation	219
X.	The World War and After	261
XI.	The Movement For A National Forest Policy	377
XII.	The Forest and American History	431
	Bibliography	440
	Index	467

THE DEVELOPMENT OF GOVERNMENT FOREST CONTROL IN THE UNITED STATES

CHAPTER I

THE LEGEND OF INEXHAUSTIBILITY

That exactly a century should intervene between America's Declaration of Independence and her first formal recognition of forestry as a matter of legitimate governmental interest, constitutes more than a striking coincidence of a fact with a round number. It lays compelling emphasis upon the influence of the forest on the shaping of the events and the gathering of the forces destined to bring about a political division of the Anglo-Saxon race. It puts one on notice that the differences between Crown and Colonies that resulted in the founding of a new nation in America in 1776 were to an appreciable extent of forest origin.

To such an extent was this true—as will be developed later on—that the creation, in the Centennial year, of that governmental agency which has developed into the United States Forest Service of to-day, is to regarded less as a beginning than as a continuation or, better, a high point in the march of a movement which affords a comprehensive view back over the old trail, forward over the new. That movement began with the discovery of America. It developed slowly through the colonial and early national eras. Temporarily checked by the War of Sections, it burst forth into amazing speed with the overcoming of that obstacle, and rushed to completion, in a scant half century, the first of its phases—the phase of conquest. To-day, in full career, it is well within a second phase—the phase of consolidation.

Now in terms of strict exactness the forest constitutes, in relation to these two phases, nothing more than an incident. But in that greater sense which takes note of those unweighable, unanalyzable

influences that make of this queer old world a world of "things as they are," it is a thing fundamental, a part of the very warp and woof of everything that America has come to be. Certain it is that in any consideration of our history, from whatsoever angle, the influence of the forest will always be apparent and not infrequently striking. Just as certain is it that, among all those other influences, the play and interplay of which have evolved the distinctive race and the distinctive civilization called American, the potency of forest influence has been second to none.

Such being the case—and the writer expects to demonstrate it abundantly—a beginning of the history of that administrative instrumentality which government, somewhat tardily, has set up for forest protection and development, as of the exact date of that setting up, would hardly do. Physically, the thing could be done; not otherwise. Just so can a picture be painted with no background. If it be a picture that is mostly foreground anyway, there is little harm done. But it is another matter if the picture is properly one that is nine-tenths background. That is how it is with the story of the governmental forest administration of America. The story proper is mostly background, so perfect and gradual a development is it, out of a long forest history that touches at every point the history of the nation as a whole. Without that background you have little or nothing left, and that little hardly comprehensible. To tell a tale, then, that marches, that has meaning, and that really informs, we must go back of 1876—a long way back.

But to do that is a large order. For the history of the American forest is a far vaster subject than is commonly realized; vaster, indeed, in its way, than were those great woods at which the early navigators marvelled. They, after all, were but the woods, with, as we know now, an end somewhere; but the history of those woods, from the day the first American tree fell before a European axe down to these days of the twentieth century, with a timber famine as a by no means remote possibility looming ahead—that is not so simple a matter. For in dealing with a subject of such scope one constantly runs the risk of being led astray by its very vastness, and getting lost in the woods he would write about. In the presence of such a wealth of fascinating interest the temptation to say something about all of it is disconcertingly great. The danger can only be

avoided by arbitrarily selecting a few prominent features for consideration, and then relentlessly sticking to them. That course we shall pursue here. And first of all we shall take a look at what is perhaps the earliest authentic example of American folk-lore, the first genuine American legend, out of which legend developed that sublime confidence in the utter inexhaustibility of natural resources that, more than any other one thing, has made the American—one way you look at it—the greatest waster in history; another way one of the greatest builders.

To trace this legend back to its remotest source, one must first consider the tide of colonization that began to flow to America in the early seventeenth century. However great may have been the differences among the folk composing it regarding such things as caste, creed, and previous condition of incarceration, they were, in the main, alike in this: they were the boldest, most enterprising, most take-a-chance spirits of England. Despite some of their stony theologies, they possessed good store of both enthusiasm and optimism. Scalawag exceptions to this general level there were, of course; men to whom America was a last desperate chance or an apparent lesser of two evils. But these men were in the minority. They had little if anything to do with the creation of a general tone. There was, nevertheless, one trait of their characters, the attribute of wastrelism general among them, that did, indeed, fall in with, and most certainly did not hinder, the general point of view regarding natural resources that was destined to develop very speedily.

The conceptions of areas, distances, and natural resources that these people had in England were naturally such as were limited by their narrow insular horizons, acquired by inheritance and rubbed in by environment. John O'Groat's and Land's End were the ends of the earth. A few hundred acres of woodland was a great forest. Forests, moreover, and the game they contained were not for the common man. Nor was property in land, save in comparatively rare instances. Such things were definitely among the unattainables and were so accepted as part of the scheme of the universe.

Such a race, with such a background, found itself, in America, in an environment that gave the violent lie to all its ingrained ideas concerning the earth and the fullness thereof. Here were scores of Britains on end, wild fowl that darkened the sun, deer in unbelieve-

able numbers shepherded by no game keepers. There was land for the poorest, would he but win it from the forest. Finally, there were forests in comparison with which the woods at home in England shrank to mere copses. From the restricted and narrow, these people stepped into the free and boundless, as a man might step from a closet into a cathedral.

It has been said that there are chemistries of ideas no less than of elements. So, too, are there chemistries of human affairs. Never has this been more strikingly illustrated than by the setting down of the venturesome of Britain in the new and amazing environment of America—a new combination resulting in a new reaction, the beginning of the development of a new breed with a new viewpoint. The Britons who first came to America, though for long they did not realize it, ceased being Britons from the moment of their coming. Such a seething up of a new breed in a new environment had been noted by Parkman in the development of that curious race of Frenchmen who were not Frenchmen, the *coureurs de bois,* so long the despair of their temporal and spiritual masters and against whom royal and ecclesiastical thunders were hurled in vain. " Once fairly in the wilderness, completely freed from the sharp restraints of authority in which they had passed their lives, a spirit of lawlessness broke out among them with a violence proportioned to the pressure which had hitherto controlled it." [1]

The most looming feature of this new viewpoint was what may best be called its spaciousness. Its horizon was boundless. An anxious thought of the morrow it did not know. Very early, Americans began to be noted for their impatience with the small scale, their irreverence for the impossible, for what came to be termed in after years their " incorrigible optimism." They grew to think in continents, and frequently, it is to be feared, they talked in universes. The later expression " Yankee brag " had a solider basis than mere jealousy.

A question that answers itself is that which inquires how this sense of enthusiastic limitlessness reacted with respect to the natural resources of the new world in which it had its birth and development. It was a case of bold and enterprising poverty loosed in Golconda. The most daring spirits of a daring race were suddenly

[1] Parkman, La Salle, XII, 165.

freed from narrow, almost niggardly, restrictions with regard to land and its related resources and were set down in the midst of a virgin profusion of such resources that, even judged by our own standards of to-day, was literally stupendous.[2] Now these men were Elizabethan Englishmen. They had not the slightest conception of present-day populations and their needs, or of present-day transport. or of the awful efficiency of present-day machinery. Is it to be wondered at, then, that they should have experienced a metamorphosis of economic thought proportioned in violence to the binding pressure they had theretofore endured? Was it not but simple human nature that they should have declared and fervently believed that the forests of America could never by the puny efforts of man be brought visibly close to exhaustion?

Just when America's forests were first called inexhaustible we do not know. Certainly it was very early. Cabot's seamen used the word, as like as not, and emphasized it with quaint Shakespearean profanity. Or even Drake's men, coasting Oregon in the Golden Hynde.

So began the Great Inexhaustible Legend, the earliest of that series of somniferous American fables of which the Edison Legend, the Legend of the One Million Farmers, and the Legend of the Melting Pot have been noteworthy examples in a later day; logical and inevitable developments, these later ones, out of the don't-worry-everything-will-always-be-well thought engendered by the first.

With the idea thus auspiciously launched in the world, for long years all things corroborated it, and nothing held it in question. Men pushed back from the seaboard and found everywhere—forests. Forests that swept on in an unbroken wave over the crests of the Appalachians and beyond; that flared out to the north in seemingly infinite stands of pine in the lake country, and to the south in a coniferous exhibition of even greater impressiveness. "We are in the midst of the greatest forests in the world," wrote Charlevoix, tracing the footsetps of Marquette and La Salle in 1721. "They are as old as the world itself," and "there is nothing perhaps in nature comparable to them."[3]

[2] The forests of what is now the continental United States covered, in 1600, not less than 822 million acres, and contained not less than 5200 billion board feet of lumber.—Report on Senate Resolution 311, 66 Cong., 2d Sess.

[3] Charlevoix, Letters, 92, 306.

Always, too, the forest news was cumulative. Men were always learning that great as they had thought the forest, it was, in fact, even greater. True, there were the great plains in the interior, with their unnumbered buffalo and truculent Sioux; but the word came back from the wandering hunters that the forests began again beyond them. And finally, in the late 1700's, came George Vancouver's explorations of the North Pacific. And even earlier, venturesome Yankee skippers had penetrated those lonely seas to barter frippery for peltry in Nootka Sound; and thence across the Pacific to convert it into silks and teas at Canton. And when they got back to Boston and Salem it was with more than holds full of princely profits. For they told of northwestern forests that dwarfed both in tree bulk and forest density anything of a like nature along the Atlantic.[4]

For many generations, indeed, the American was not merely told the forest was inexhaustible; he was given—according to the standards of the time—unimpeachable proofs that it was so. From all of which it followed very naturally that by the time the nineteenth century had got well started, the idea of forest inexhaustibility was no longer merely a belief with the average American; it was an enthusiastic conviction; it was almost, indeed, a tenet of his religion.

And as the century passed the idea was continually emphasized. The printed word passed it along. The spellbinder peddled it. Fourth-of-July orations were not complete without flowery embellishments touching "our inexhaustible ree-sources" and "our boundless forests," a theme lending itself readily to the lugging-in of a collateral popular proposition to the effect that America had room and resources to spare not only for her own people but for the so-called "down-trodden and oppressed" of every land under the sun.[5]

The nineteenth century, indeed, was much more than half gone before the idea was seriously challenged. Mutterings there were, to

[4] To these influences must be added the impressions unquestionably brought back by the members of the Lewis and Clarke Expedition.

[5] The *Daily National Journal* (Wash.) for April 16, 1831, contains a letter in which occurs the following: "North America, and more particularly the United States, is a land of refuge for the poor and oppressed of all nations." A footnote to the letter requests that editors "will please give, *pro bono publico,* the above a passing insertion."

be sure, even in colonial days, as we shall see later on, but they were few, scattered, and, for the most part, incoherent. The heresy they represented was not to gain general audibility until well into the seventies, and not then in any stentorian sense. Francis Parkman on the western plains in the forties slaughtered buffalo wantonly, left the carcasses to rot, and later wrote about it jocularly in the "Oregon Trail," thus giving expression to what was destined to be the general American viewpoint for many a long year thereafter.

With the close of the Civil War, the energies of the lusty young nation, temporarily diverted to destruction, were turned to construction. Civilization, or, if you prefer, material development, surged westward like a wave. Coincidentally came a great rush of immigration. There was a veritable epidemic of railroad building, and new towns and cities by the score made cartography a feverish trade. The new map of to-day was obsolete to-morrow.

All this required wood—a very great deal of wood. It stood ready to hand in the forests of Michigan and Wisconsin, lordly stands of the finest white pine the world has ever seen. Southward and westward it flowed in never-ending streams, by lake and river and new-built railway to create houses and schools and churches and farms from Indiana to Dakota. The foundations of the future greatness of the mighty Central West of to-day were laid in a very real sense in the forests of the lake states. That development was dependent upon good wood, cheap wood, unlimited quantities of wood. The lake forests furnished it largely with the sturdy labor of a great portion of the Scandinavian element of the tide of immigration of the day which turned naturally to work, bred into its fibre for centuries in the Bothnic forests.

But this raging rush of unprecedented development meant more than wood. It meant the beginning of the taking of a forest toll that made all the immense tolltakings that had gone before look puny. Forests melted away like snow before the sun. The increased and ever-increasing demand for wood stimulated the invention of ever more efficient and increasingly large-scale mill machinery. It likewise made for ever greater prodigality in the harvesting of that gigantic forest crop which had been growing in America during the centuries against the day the Anglo-Saxon should sail westward to realize his destiny.

Some comprehended this new and greater utilization and cried out a warning. The mutterings increased. But still their sum was negligible. To the average American the forests were still inexhaustible; even to the more than average. One of them, described, without exaggeration, as "wise and learned," said, in 1891:

It's all bosh—this talk about the destruction of our forests. There is more wood growing in the United States now than there was one hundred years ago, more than we want and can use; . . . Don't you know that all the abandoned farms in New England grow up in wood? Don't you know that in the South more than half the land is covered with forest? And along the Pacific Coast the timber is simply inexhaustible.[6]

In other words, the legend of inexhaustbility at the close of its third century as an article of popular faith was little less strong than it had been in 1600. It was held by not a few men of learning. To the popular mind it was still gospel. The average American of the nineties still took wood for granted—for a thing that always had been and always would be.[7]

A conception of that idea of inexhaustibility is what these first few pages have tried to drive home. In the consideration of our present theme it is a conception of first importance. For the forest troubles that are beginning to gather threateningly about us to-day, it is, to a very great extent, directly answerable. Naturally, therefore, it stands behind whatever measures we may take to ward those

[6] *Forest Leaves*, June, 1891, Vol. III, No. 6. The name of the holder of this opinion is not given, but it was unquestionably the late Henry Gannett, for many years Geographer of the Geological Survey, Geographer of several of the censuses, of the 1908-09 Conservation Commission, President of the National Geographical Society, etc. See Report of Secretary of Agriculture for 1893, pps. 313-15.

[7] A viewpoint strikingly illustrated by the experience of Canada. Writing of the failure of that country to carry out a policy of wise forest conservation as urged by the British Government in its instructions to Governor Guy Carleton in 1775, a Canadian author says: "such a policy of conservation was over a century in advance of the time. Nor, regrettable as was this falling away from an ideal, could an adhesion to such a policy be expected under the circumstances. When over one hundred years later men supplied with the latest information were still talking about "illimitable" and "inexhaustible" forests it was not to be expected that in 1775, before the days of systematic surveys, men would have the foresight to persist in conserving what seemed almost too cheap and too abundant."—Lawler, Historical sketch of Canada's timber industry, 2.

troubles off. To get the true background of the American forest scene of to-day it is essential that we begin at the beginning. The beginning was the Great Inexhaustible Legend.

With this thought in mind we now turn to the consideration of a second arbitrarily selected feature—the utilization of the vast virgin forest wealth of America during the seventeenth and eighteenth centuries, a utilization which, intimately bound up and commingled with the thought aforesaid, was to affect profoundly America's entire after career.

CHAPTER II

THE BROAD ARROW

The use of the forests of America during, approximately, the first two centuries after the year 1600 and the restrictions, or attempted restrictions, which government placed upon that use might seem to constitute but a minute historical episode. From the standpoint of mere bulk that is true. The bigness that is legitimately its own must be sought in another sphere—the sphere of the sum of those impalpable and imponderable influences which are ever at work silently, invisibly, yet none the less surely, directing the course of world events and determining the destinies of peoples. Examined even cursorily in this light this minute episode looms with fascinating history and with romance that is none the less romantic because it happens to be true. Sea power, the subtle influences that set men to trafficking to distant lands, the course of agriculture and of industry, all these and many more of the larger manifestations of the ever-changing life of the race it touches very nearly. Later on this abstract aspect of the matter will be considered more fully. For the present, consideration will be given to certain of the more outstanding features of the concrete side of it. Upon these bolder facts the story proper may be hung.

With the definite establishment of permanent settlement the utilization of the timber for other things than fuel, fencing, and shelter was not long in coming. There is some reason for believing that a saw mill was in operation at what is now York, Maine, as early as 1623.[1] It is certain that in 1631 the settlement at the mouth of the Pascataquacke, in New Hampshire, was exporting boards to England;[2] and that in the same year a ship with the Providence-tempting name "Pied Cowe" fetched over a model for a mill that was set up at Berwick, thus giving New Hampshire a start in forest product matters that was long maintained, and in time became

[1] Defebaugh, History of the lumber industry in America, II, 6. 7.
[2] Jeremy Belknap, History of New Hampshire, I, Chapter 1, III, Appendix

proverbial.[3] Apparently the venture throve from the start, for three years after the coming of the "Pied Cowe" the London proprietors sent over a party of eight Danes to establish other mills and direct the work; a matter, this, of much more than passing interest when one considers the overwhelmingly Scandinavian flavor of the lumber camps of the Lake States and the Pacific Northwest more than two centuries later.[4]

This early lumber primacy of New Hampshire was founded on other things, however, than the mere fact of an early start and the importation of experts from the Baltic forests. There was more and better timber there than in other parts of New England; rafting facilities were excellent; the land was less valuable agriculturally than that in Massachusetts and Connecticut; there was no temptation toward the growing of lucrative staples such as obtained in the South. Nevertheless, there was no lack of forest exploitation elsewhere; much of it in New England; not so much—with the exception of Carolina—progressively toward the south. By the middle of the eighteenth century there was a brisk trade in lumber from Pennsylvania,[5] and by the same period, an observant English writer of the time tells us, there were many saw mills upon

[3] A circumstance interestingly illustrated in a curious volume called "The Foresters," by Jeremy Belknap, one of the first works of fiction produced in America, appearing shortly after the Revolution. The characters in this quaint allegory represent the several colonies and are given names suggestive of some outstanding feature thereof—economic or otherwise. New Hampshire is represented by "Robert Lumber."

[4] It is possible that this circumstance may have more of a foundation than a mere coincidence. Carlyle, in "Heroes and Hero Worship," says: "Nor was it altogether nothing, even that wild sea-roving and battling, through so many generations. It needed to be ascertained which was the *strongest* kind of man; who were to be rulers over whom. Among the Northland sovereigns, too, I find some who got the title Wood Cutter; Forest Felling Kings. Much lies in that. I suppose at bottom many of them were forest-fellers as well as fighters, though the Skalds talk mainly of the latter—misleading certain critics not a little for no nation of men could ever live by fighting alone; there could not produce enough come out of that! I suppose the right good fighter was oftenest also the right good forest-feller—the right good improver, discerner, doer and worker in every kind; for true valor, different enough from ferocity, is the basis of all. A more legitimate kind of valor that; showing itself against the untamed forests and dark brute Powers of Nature, to conquer nature for us. In the same direction have not we, their descendants, since carried it far? May such valor last for ever with us."

[5] Fiske, The Dutch and Quaker colonies in America, II, 313.

the Hudson's tributaries " for the mere purpose of sawing boards, planks, and other sorts of lumber, which goes down in immense quantities to New York, from whence it is shipped for the West Indies." [6] And at a much earlier date the commercial possibilities of the pine woods of Carolina had been recognized, and the beginnings made in that naval stores industry from which has been derived that pungent sobriquet for Carolinian which—approximately enough—has " stuck " to this day. By the Revolution, " tar, pitch, turpentine and every species of lumber " were being exported " in astonishing quantities " ; [7] a lumber commerce, so to speak, of the second generation, for the ships that carried it away from the Carolina inlets were, for the most part, Yankee brigs which had been built of New Hampshire pine. And with this legitimate whiff of the sea that clings to the memories of that early traffic there goes a wilder and more romatic tang that conjures up visions of John Silver and his swearing parrot. For there were pirates in those days on the Carolina coast, and the men who sold them timber and tar for good yellow doubloons bothered not as to how they came by them.[8]

The earliest products of the colonial mills were rough planks, clap boards, and shingles. Very shortly, however, there developed a great trade in pipe staves, which went out loose to the West Indies, where they were assembled into rum casks; or to Spain, Portugal, and the Madeiras to contain the blander beverages of those climes.

This stave development coincided with the first American fabrication of wood of sufficient importance to affect materially the prosperity of the colonies. This was the building of ships, which had its inception in Massachusetts in 1631, the year the " Pied Cowe " came, when, on July 4, at Medford, the " Blessing of the Bay " took the water. By the end of the century American ships had an established reputation and were being built of as great a size as four hundred tons; [9] and that not only for the direct use of the builders but also to be peddled in the bottom market.

[6] American husbandry, I, p. 101-02.
[7] *Ibid.*, p. 331-32.
[8] Fiske, Old Virginia and her neighbors, II, 361.
[9] Edward Everett Hale, Studies in colonial life, 49.

On the purely economic side, these forest-founded old colony activities had, beyond question, a great deal to do in the creation of that diversity of material interests as between England and the colonies that, as the clear-thinking saw even then,[10] could not fail to create in turn a threat of ultimate separation. It is probable that in comparison with them another activity of the time to which we have not as yet alluded, the utilization of New England trees for masting for the Royal Navy, was, as a purely economic irritant, of considerably less importance. But reasons other than economic conspired to make of this seemingly commonplace transaction a truly pivotal circumstance, not only with regard to the development of affairs in the colonies, but, to no slight extent, in connection with world events of the late eighteenth century as well. Not only pivotal but symbolic, as we shall presently see.

The naval possibilities of the great pines of New Hampshire and Maine did not long go unrecognized by a nation whose existence depended upon its fleet, and whose fleet depended for its motive power upon the sticks that carried its canvas. Nelsons, Rodneys, and Collingwoods are all very well. In the final matching-up it is the stuff compounded of the character, ableness, and daring of such men that makes sea-power. Good men in poor ships, as Mahan has said, are better than poor men in good ships. The history of England has impressively proved it. But for all that there is a limit to the powers of the good men. Their ships must not be too poor. In a day of sails they must have masts.

Now in the mid-seventeenth century there was a great plenty of trees in the lands about the Baltic out of which masts could be made—good masts, too. In certain respects they were as good as the best masts that came out of New England. They were not so big—the Baltic forests had been logged too long for that—but they had their points of excellence in which, according to some of the English naval shipwrights at any rate, they were to be preferred to the masts of Maine and New Hampshire. The English Navy used them extensively in the seventeenth century and, indeed, clear up until the final displacing of sails by steam, and would have been entirely content to depend upon them at all times but for one very vital circumstance—they were from without the Empire. There was ever, so to speak, a smell of danger about them; danger that

[10] American husbandry, II, 289-319.

some day a combination of England's loving continental friends might be able to choke off the mast flow from Scandinavia at the source, and so render England's navy helpless.

That was why it was that Old England's interest in the woods of New England was both early and keen; why it was that less than a half-century after Plymouth Rock, on August 12, 1664, we find Samuel Pepys declaring: "Up, and all the morning busy at the office with Sir W. Warren about a great contract for New England masts."

And that the trade was still flourishing near a century afterwards, we have the evidence of a fascinating but, it is to be feared, little-read American Pepys,[11] who, on August 2, 1744, made this entry about New Hampshire: "The trade of this place is fish and masting for ships, the navy at home being supplied from here with very good masts."

By the time of the Revolution a great trade in masts and spars was enriching New England, and the pines of New Hampshire were carrying canvas in all the seven seas—in tall Indiamen beating around Good Hope, and in all the battle fleets of Western Europe.[12]

A game extensively played inevitably gathers about itself a body of rules. So it was that the exploitation of the colonial forests set in motion the enactment of a body of forest legislation which by the time of the Revolution had grown to considerable proportions. To most people of to-day, it may safely be said, this statement will be surprising, the popular idea about forest legislation being that it is, in America at least, a very recent thing. This is far from being the case in the general sense, as will presently be made apparent. But in the more special sense in which the man-in-the-street thinks of it, to wit, the conservation idea of to-day, it is entirely true. That is how this perfectly natural misconception has arisen.

It has already been made sufficiently plain that the colonists were not slow in discovering that the forests about them had a very

[11] Alexander Hamilton, M. D., of Annapolis, Maryland. His "Itinerarium" was privately printed by William K. Bixby of St. Louis in 1907. As an intensely human document it is fully up to the standard of its more famed English prototype.

[12] According to Dr. Hale, in all the fleet actions in 1780-81 in which the English, French, and Spanish navies were engaged, all the masts of all the ships were American.

definite value readily convertible into money. Along with this went naturally the realization that things injuring this resource struck at the springs of the general prosperity. Forest fires that wiped out potential rum casks and main yards, wanton logging that wasted them, "orneriness" that stole them; all these were things that hit both the public and private purse. And again, staves full of worm holes, unseaworthy ships, rot-pitted spars, and scamped tar and turpentine likewise fell foul of the general welfare for reasons it were superfluous to amplify. The "rooking" of one Oporto wine merchant with one consignment of inferior staves by one over canny Yankee was a thing of far reaching consequence to every stave cutter in Yankeedom.

It was in the main for reasons such as these that the colonial legislatures enacted a respectable body of laws dealing with the forest and its products, beginning with the ordinance of the Plymouth Colony of March 29, 1626, regulating the exportation of lumber, and continuing at frequent intervals in all the colonies to the Revolution.

These were the main objects, their gist being the protection of the gold-egg goose. There were some others of less moment; worthy of remark here because of their novelty. One had to do with a situation created by the encroachment of sand dunes in the vicinity of the town of Truro, on Cape Cod, said to have been brought about by cutting the timber and permitting stock to graze on the sea side commons. A number of acts were passed during the eighteenth century in the hope of averting this menace.

During this same period some legislation was enacted in Massachusetts designed to further a couple of experiments in the coöperative management of forest land by a number of private owners. There is some reason to believe that the object back of this was the conscious growing of wood crops. The probabilities are, however, that the advantages of unified control were aimed at during a period of holding for a higher market.

Legislative regulation of the use of rivers as highways for logs and log rafts had its beginning in Connecticut in 1752, the essential features of the theory then adopted being later embodied in similar legislation elsewhere and forming the basis of the body of law upon the subject in existence throughout the country to-day.

A matter not strictly legislative in character, though rather closely related thereto, is the origin in this early period of the term "lumber" in the sense we understand it to-day—that is, felled timber sawed into various utilizable forms. Lumber, to sixteenth century Englishmen, meant miscellaneous odds and ends, heterogeneous junk of every sort, and went back etymologically to the "lumber rooms" of the Lombard pawnbrokers in England where those gentlemen stored their pledges. It was thus natural for the early Bostonians to complain when great piles of pipe staves awaiting shipment to Spain and elsewhere began to litter up their waterside, of the "lumbering up" of the wharves. And an obvious development was this first known official use of the term in a police order of 1663: "to clare the ends of all streets and wharfes that butt upon the water from all lumber and other goods."

There was a considerable range of difference among these early statutes as regarded their faithful observance and their standards of successful enforcement. With those requiring certain standards of excellence of products these were high, ease of enforcement and individual advantage alike conspiring to that end. A different and much more difficult situation existed, however, in the case, for example, of the settler endeavoring to avoid drudgery in the clearing of his holding by the use of fire. Likewise as regarded the prevention of wastage and thievery. Of the trade at Norfolk, Virginia, for example, we learn that it flourished by virtue of "a pretty deal of lumber from the borderers on the Dismal who make bold with the King's land thereabouts without the least ceremony." [13] The pioneer, with the Inexhaustible Legend in the back of his head was far from regarding all law as sacred. And such enforcing officers as existed shared the pioneer viewpoint.

The significance of these early statutes does not lie, as some have thought, in the existence of any sentiment for conservation such as we know to-day. It is true that many of them recited the evil results to be anticipated from a shortage of wood. It is also true that in the lengths of prohibition to which some of them go, and in the rigor of the penalties they sometimes threaten, they furnish a contrast to the *laissez-faire* policy of later years. But was the idea back of them, the husbanding of a resource against its possible

[13] Fiske, Old Virginia and her neighbors, II, 245.

total extinction in the remote future? Most assuredly not. It was an idea of conservation, certainly. Anything that makes for saving is that. But the conservation aimed at was a conservation of convenience, in the first place, the conservation of timber in accessible situations,[14] which in those days of crude transportation meant nearness to rafting water; and in the second place it was the mere attempted protection from waste and theft of a resource that had come to have a definite money value. That it had in mind the possible coming of a time when forest use would exceed forest growth, there is no evidence and less likelihood.

The following observation is not only an accurate estimate of the state of American forest thought at the close of the Revolution but a shrewd bit of prophecy as to the years to come:

In America there is no sovereign right over forests and game, no forest service. Whoever holds new land, in whatever way, controls it as his exclusive possession, with everything on it, above it, and under it. It will not easily come about therefore that, as a strict statutory matter, farmers and landowners will be taught how to manage their forests so as to leave for their grandchildren a bit of wood over which to hang the tea-kettle. Experience and necessity must here take the place of magisterial provision. So far there is indeed no lack of wood, except in particular localities or for particular purposes. Only in towns is the price high, and for the reason that the charge for cutting and hauling is four or five times the value of the wood on the stump.[15]

As to the thunder and lightning in the laws themselves, indicating a significant contrast to a more *laissez-faire* policy of later years, it will be enough to say that the spirit of the laws reflects the general rigor of their day; not any enlightened and ultra progressive con-

[14] As early as 1720 the shortage of timber for fuel in the immediate neighborhood of centers of population in Canada, brought about by indiscriminate cutting and burning, had led to the enactment of stringent measures by the French forbidding the trespassing by the inhabitants of towns and villages on the lands of their neighbors to cut fuel.—Lawler, Historical sketch of Canada's timber industry.

[15] Schoepf, Travels in the Confederation, 1, 38. The author, surgeon to the Hessian troops during the Revolution, had studied forestry in Europe, and during a tour he made through America subsequent to the war, had ever an eye for forest conditions.

ception of conservation.[16] Those, it is to be remembered, were likewise the days of the pillory and the scarlet letter.

The evidence, indeed, is all the other way, and indicates a colonial forest viewpoint of three somewhat contradictory ideas:

First, the forest had great money possibilities. It use should be regulated, therefore, so that the greed or carelessness of the few should not inure to the disadvantage of the many.

Second, the exhaustion of timber easily got at and brought to mill was possible, but the total exhaustion of the forests was utterly impossible.

Third, even if the forests were totally cut away, it would be no crying matter, for they were in many respects a nuisance. As Dr. Schoepf put it, in 1783:

> Because at the beginning in the nearer, and latterly in the farther regions of America, wood has been everywhere in the way of the new planter, people have grown accustomed to regard forests anywhere as the most troublesome of growths; for if crops were to be seeded it was a necessity to cut down the trees and grub the roots,—a great labor, and if the forests could only be blown away, then certainly few trees would be there to give them trouble. A young American going to Europe happened to land on the west coast of Ireland, where in certain parts not a bush is to be seen for many miles. He exclaimed in astonishment, "What a wonderful country! What a lucky people, with no woods to plague them." "We are plagued," they answered, "precisely because we have none, and we are planting as fast as we can." [17]

The legislation noticed above was all colonial legislation—the efforts of the colonists themselves to regulate in their own interest an industry by means of which, directly and indirectly, a solid prosperity was being built up and great strides were being made toward economic and industrial independence. It now remains to examine the efforts made by the Mother Country toward a regulation of forest exploitation with regard to her own commercial and military interest.

[16] The nearest approach to anything of the sort in those early days is to be found in the fundamental ordinance promulgated by Penn in 1681 before leaving England, in Section 18 of which he stipulated that for every five acres cleared one acre should be kept in trees. Was this a far-seeing sense of conservation or merely an early manifestation of that deservedly celebrated Quaker thrift?

[17] Schoepf, I, 37.

One of these elements has already been hinted at in what has been said about naval masting. The definite recognition by Great Britain in the seventeenth century that her future lay in the realm of manufacturing and a sea-borne commerce, and that sea power was an indispensable adjunct thereto, caused English statesmen to take the anxious thought of the naval morrow above described and to make independence of the Baltic a major point of policy, to the consummation of which the colonial forests seemed to point an easy and a practicable path.

In the general scheme of commercial exploitation which was envisaged for the American plantations, *i. e.*, that they should be producers of staples and raw materials and consumers of British manufactures, the whole to be carried in British bottoms, or American bottoms trading only with England, the forest again was a point of major consideration. The exploitation of the forest was desired, but it must be British or under British control.

Such, in bold outline, were the objectives of British colonial policy during the seventeenth and eighteenth centuries. Detailed examination of the concrete legislative efforts made by the home government toward the attainment of these objectives, efforts both direct and by way of pressure brought to bear upon the colonial governments by the Crown, will not be made here. It will be enough to say that the Navigation Acts of the Commonwealth and the Restoration and a considerable body of additional legislation passed prior to the Revolution, including executive regulations, bounties and subsidies, and reservations in charters, represent the home government's long-continued and ultimately futile attempt to direct the economic growth of her American plantations into man-made rather than nature-made channels. As touching the forest, it is pertinent to observe here, ultimate exhaustion of the colonial timber was no more of a moving consideration in the making of the home legislation than it had been in the case of the colonial. Such conservation as it contemplated was likewise a conservation of convenience.

But amid all this Crown regulatory effort there was tucked away one thought which must not be passed by with casual mention. This thought embodied no new principle. Rather, indeed, was the principle a very ancient one, running far back into feudal times—the principle that forest on Crown land is Crown forest, and as such, subject to the immemorial rights clustering about wood-bote, not to be exploited by anyone for private gain.

Now this principle had never been abrogated by the Crown in the American colonies. Nor, although it had come to be almost universally disregarded, can it be considered to have been tacitly surrendered. The colonies themselves had substantially affirmed it in legislation, and had then, as we have seen, failed to enforce that legislation, partly because of the undeniable difficulties in the way of doing so, difficulties so obvious as to make their detailing unnecessary, and partly because of the state of public sentiment—the gist of which sentiment was about as follows:

Here is an inexhaustible forest with plenty and to spare for all men for all time. I can enrich myself from it without affecting any one else's right to do likewise. Why, therefore, shouldn't I do so?

Specific reaffirmation by the Crown of this ancient principle of the Crown forest came in 1691, brought about by events we shall refer to later. A clause of the new charter granted that year by William and Mary upon the consolidation of the greater part of the New England colonies into "The Province of Massachusetts Bay in New England," reserved to the Crown for the use of the Royal Navy all trees more than twenty-four inches in diameter, twelve inches from the ground on all lands in the province not theretofore granted to a private person. Previous grants had alienated not merely the land but everything in and on it. Thereafter grants might be made of land, but they did not carry with them any property in the choicest part of the forest growing thereon, which was not to be cut or removed save under royal license. Within the space of a few years this old-new principle had been extended to the balance of New England, and to Nova Scotia, New York, and New Jersey, and various measures had been taken to secure its observance. Officers [18] were appointed to register the royal trees and to protect them from theft and wanton destruction. Severe penalties were prescribed against violation. Finally, that no man might plead ignorance of a tree's status, it was provided that the reserved trees should be marked with the Crown symbol—the Broad Arrow.[19]

[18] Known as "Surveyors-General of the Woods." Deputies were also appointed.

[19] A similar reservation of choice trees for naval purposes was attempted by the French in Canada under the seigniorial law. Although the near-absolutism existing there was much more favorable to the enforcement of such a measure, its success as a means of lumber supply for the French navy was never extraordinary.

Here, again, was conservation, but not, it is as well to reiterate, of the sort called forth by an apprehension of complete exhaustion. The impelling cause for this move was the state of affairs at home; fraught for England with no little danger. The series of wars with France, which were destined to settle finally the question of which race was to dominate in North America, were taxing England's resources to the limit. The issue of those wars, England's statesmen clearly saw, depended upon sea power, and in order to make that power certain and safe, to render it free of any dangerous dependency which might fail it at a critical juncture, they rightfully put forth their strongest efforts. In doing so, it is well for us to remember, they were not merely working for the selfish interests of England. Had France gained an undisputed sea-mastery in that great conflict, no power on earth could have prevented the English colonies in America from falling like so many ripe apples under a domination that would have had no bowels about subjecting them to the same cassock-inspired feudalism then governing Canada. In a word, Anglo-Saxon civilization in North America would have disappeared.

But in making this reaffirmation, England was confronted with the fact that for many years, ever since the days of the " Pied Cowe," indeed, a very large part of the colonial lumber trade had not been strictly above-board with respect to the law. The Navigation Acts and supplementary legislation had not been able to make all the lumber products flow through English channels. Much of it got to other European countries despite the laws, which the colonists became expert in circumventing. There was money in the business and the colonists resented the home government's efforts to prevent their earning it.

An infinitely more flagrant feature of the matter had to do with the title to the timber out of which a great deal, perhaps by far the larger part, of the colonial export lumber was manufactured. In unimpeachable legal theory trees on unpatented land belonged to the Crown. But the theory of the new breed growing up in America was impatient of such a doctrine. The American might render lip fealty to the Crown ownership theory, but his private opinion was that such trees belonged to nobody, and therefore to anybody who cared to take them. The behavior of the " Borderers on the Dismal " in this respect has already been noted.

The example is a pretty accurate cross section of the general situation from Nova Scotia to Georgia, a situation more or less open and notorious, and, in the colonies, generally regarded with tacit approval. Thus there grew up in America a theory, a state of mind, with regard to timber standing on public land which was to have momentous consequences in years to come. Like the Inexhaustible Legend it was a perfectly natural development with a hard-bitted breed of men who had a virgin continent of unmeasured vastness before them, the sea at their backs, and only their own hearts and hands to sustain them. Such a breed, so circumstanced, will regard as its own, and not as a far-away king's, the forest which it braves and subdues.

So it was, that, by the time she had got past the crisis of the War of the Spanish Succession, England discovered that it was much harder than it had been to obtain first rate masts and other shipbuilding material at the ports of New England: not because the forest as a whole was being exhausted, but because the more accessible trees, Crown as well as privately owned, had been cut away, to be sold, in very many cases, to the common enemies of colonies and motherland. Mast trees were still there in enormous quantities, but farther away and correspondingly harder to harvest; also correspondingly more expensive. Under the circumstances England's action in reaffirming the theory of Crown ownership of public land timber, and taking steps to make it a fact, would appear to have been abundantly justified. Disregarding the fact that the theory was as ancient and as well-established as the Common Law itself, the immediate situation was one calling imperatively for the interest of the State above that of the individual.

But though the situation in its main outlines was as apparent then as now, it contained within itself elements of irreconcilability which made up a problem that only the highest order of statesmanship might hope to solve. It was a problem going deeper than the facts and figures of commerce and industry down to that bafflingly elusive thing we vaguely call human nature, that inexplicable blend of charm and cussedness, of god-like generosity and brute selfishness, that is at once the simplest and most complex thing in the universe; the thing that made the despairing Mark Twain cry out upon the "damned human race." When human nature largely complicates a problem—and no problem ever reeked with it more than that one

that culminated in the American Revolution—the men who solve it must have more to them than the trappings of place and the portentous solemnities of diplomacy; more even than rectitude, the best of intentions, and business ability of the highest order. They must possess that rarest of gifts—the ability to direct human nature with sympathy and understanding, yet firmly and "without capitulation"; with simple fairness untainted with the slightest trace of demagogic fawning.

Now it was the rock of human nature with all its jagged edges of contrariness and selfishness that lay full in the course of British imperial policy in North America in the eighteenth century, and it was that rock, in the last analysis, that caused the smash of 1776. Out of that smash emerged a free America and a somewhat dishevelled Britain—a Britain shorn of sundry valuable possessions, but with an invaluable lesson unforgetably pounded into her consciousness that has stood her in good stead in later years in South Africa, Australia, Canada, where not. She learned that human nature was too "kittle" a stuff, to employ an expressive Scotticism, to be handled without care.

It is time that our school histories got away from the habit of airily explaining away the American Revolution in terms of tea, taxation, and tyranny. Tea and taxation there were, to be sure, and tyranny too, by a somewhat violent stretch of the imagination. But these things were but straws on the surface. The underlying tide was human nature running at cross-currents.

It is no discredit to either party to say that the springs of these currents came out of selfishness. Selfishness is the force that moves the race forward. The never ending problem of government is to furnish that force with a balance wheel.

It was but natural for Britain to want to direct the commercial and industrial course of the American colonies in her own interest. It was every whit as natural for the colonies to desire that, in an economic sense, charity should begin at home. The crux of the problem was how to merge these selfish viewpoints into a single viewpoint, an imperial viewpoint, which should be a force driving ahead for the behoof of the race before either that of the colonies or the mother country. As to whether this could in fact have been done, will ever be one of the favorite what-might-have-been speculations of historical inquiry. The material interests at stake were

so involved and so contradictory as to make any peaceful reconciliation of the differences seem, at first blush, a manifest impossibility. But was it not, after all, a matter of men rather than money, of personalities rather than trade balances? Had Britain been served in those difficult days by statesmen and administrators of the character and calibre of the three great sons of Emmanuel Howe[20] would the separation have occurred? But unfortunately for the peace of the world men of the Howe stamp never occur in multitudes. That three should have lived at the same time, sons of the same father, is one of the striking coincidences of history.

But the reconciling instruments were not at hand. Instead, there were men who either could not or would not understand that a delicate economic situation, which wise handling may save, is turned into a psychologic situation which is utterly hopeless by bullying, hectoring, wheedling, and, above all, by patronizing. Johnsonian "whysirrahism" and a sneering snobbishness for "blawsted colonials" had infinitely more to do with splitting the British Empire than all the tea, taxes, and—for our present purposes—timber, in Christendom.

The economic end of it has been thoroughly summed up and graphically narrated by many able writers and patient investigators. The human nature of it has not been so carefully treated. There are many volumes about the squabbling over the shipment of fish and lumber and masts to Spain, Portugal, and the West Indies, or over the wranglings with regard to bounties and subsidies; much, too, about the woodland brawlings over the Broad Arrow and the flouting thereof: an infinitude of detail, in short, about the economic fact and the corresponding economic why. All of which, of course, is both interesting and important; yet not so interesting and not so important as the bigger thing in the background which has never received anything like so much attention—to-wit: the spiritual

[20] Admiral Richard Howe, General Sir William Howe, and Brigadier General George Howe. All three, English of the English, aristocrats of aristocrats, not only possessed professional attainments of the highest order, but also "that sympathetic power, the inestimable gift of the true leader of men, in which lies the difference between a willing and a constrained obedience." Without pretense, they instinctively and sympathetically grasped the view-point of the Americans, who, in turn, as instinctively liked and trusted them. When Sir William Howe came to Boston, in 1775, the memory of his brother, who had fallen at Ticonderoga in 1758, was still held in veneration, despite the bitternesses engendered in the years between.

chemistry involved in the pouring into the American crucible, upon the stuff evolving out of the combination of ancient North European forest backgrounds with new world spaciousness, of the acid of a more or less contemptuous superiority. Out of such a mingling of elements there will come a reaction the reverse of gentle.

It came in America at the three-quarter mark of the eighteenth century. Of the forest phase of it—for the forest was but a phase of it, though a by no means small one—one of the best-thought-of economic observers of the period has made two striking statements. One is to the effect that with regard to forest utilization the economic independence of New England preceded by many years the political independence that was declared in 1776. The other, which draws nearer to the true inwardness of the matter, questions the possibility of determining "to what extent the irritation of the New England woodsmen may have laid the foundation for the resentment" which came to a head in that historic year.[21] In other words lumber, standing for the utilization of the forest and the regulation of that utilization, had come, in something less than two centuries, to be an economic influence upon the unfolding of events in America second only in importance to the spiritual influence exerted by the vastness, the pitilessness, and the mystery of what we shall simply term The Forest—the "Dark, Brute Powers of Nature" that the American had to conquer or be conquered by.

For timber was a straw on the surface—or, more appositely, a floating saw log—no less than tea and taxation, and in the struggles over it between Crown and colonies we have an excellent picture in miniature of the whole difference that ultimately culminated in the historic agreement to disagree. In it there is also clearly set forth the setting in motion of the forces that were to shape American forest history down to our own times. Boiled down these forces were simply rampant individualism impatient of any restraint and obsessed with two pieces of attractive "hoakem": one, that the forest was inexhaustible; the other, that public timber was anybody's timber. When ideas get a fair start in a favoring environment they are apt to go far, no matter how erroneous they may be. These two ideas were destined to go a long way with us.

To the American who faces the history of this period with frankness and without an excess of flabby sentimentality there need come

[21] Lord, Industrial experiments, 56, 87, 123, *passim*.

no sense of humiliation at the undoubted selfishness and inconsistency of the " fathers " with regard to the utilization of the forests. Where the humiliation should come in is over our smug assumption of superior virtue in the matter. We were very selfish and very inconsistent because we were very human. So was the mother country—for precisely the same reason. Never did the old adage about the six and the half-dozen have a clearer exemplification. " Our forests," said the colonists, who, bearing the burdens and facing the dangers of the front line of civilization, looked with resentment upon dictation emanating from people in England safe from the tomahawk. A point of view, this, with much simple human justification for it; one worth bearing in mind, too, for we shall see it again. " Crown forests," said England, on the other hand, with the law and immemorial custom for justification, to say nothing—with regard to the reservation of mast trees at any rate—of the paramount importance of the safety of the Empire.

And so things drifted on, and the statesmanship wise enough and strong enough to reconcile these antagonistic viewpoints failed to materialize. The ever-present French menace to the north and west was removed—preponderatingly by reason of that Royal Navy in whose behalf the Broad Arrow had been put on the pine trees and the colonists freed from the dread of domestic danger, and economically on their feet very largely because of a forest-created prosperity,[22] began to think more and more in terms of nationhood. And when the conflict finally came and Britons and Americans faced each other in arms at Bunker Hill, was it chance or design that impelled the latter to commit their cause to battle under a banner which bore upon it the image of one of those great pines over whose utilization brethen had thus come to disagree so signally?[23]

With the triumph of the American arms eight years later, there naturally went in the popular mind justification of the American viewpoint on all the questions which had led up to the disagreement. To the ordinary American the surrender at Yorktown was a judicial decree proclaiming the righteousness of pioneer forest thought and branding the Broad Arrow as anathema; a sense of virtue vindi-

[22] A prosperity aptly symbolized by the pine-tree shillings minted in Massachusetts in the seventeenth century.

[23] The pine tree also appeared on various American naval flags used during the Revolution.

cated that, as we shall presently see, was soon to be jarred most rudely.

It only remains, in closing our notice of this formational period to mention briefly the forest legislation enacted between 1776 and the adoption of the Constitution. In bulk it was negligible, consisting of a few acts in certain of the revolted states which were mere reaffirmations of previous legislation governing firing, stealing, and the quality of forest products. But there was one interesting exception. This was the Massachusetts act of 1783, which was in all essential respects a reaffirmation of the Broad Arrow, the legislature being substituted for the Crown as the power to license the cutting of trees of a certain size on public lands.[24] So spoke the law. That popular thought was another matter, the ensuing century was to demonstrate. It was likewise to demonstrate the embarrassment that is bred of inconsistency. This latter demonstration began almost coincidentally with the beginning of our independent existence with one of the most exquisite little ironies in history.

[24] This attempt to deny parallel sauceability for goose and gander—for that is what it amounted to—has been explained by saying that the colonists had no quarrel with the Broad Arrow idea in principle, but that they merely objected to the "locking-up" of great numbers of trees for which the Royal Navy could have no use. The reader is cautioned to mark this argument well. He will meet it again.

CHAPTER III

SANTA ROSA

It is no exaggeration to say that we began our national life, as regards forest affairs, squarely between a dilemma's horns. If legislative utterances mean anything, we stood committed to the principle that timber on public land belongs to the State. Yet we had waged the War of Independence in great measure to vindicate the very opposite of that principle.

But as an independent nation responsible for the handling of our own foreign affairs it was speedily and unpleasantly borne in upon us that such a double standard is not lacking in inconvenience. Within the first decade after 1789 the aggressions of the Barbary Pirates had become so vexatious as to render the creation of a navy imperative. "If we do not render ourselves respectable we shall continue to be insulted,"[1] wrote Gouverneur Morris, in 1794. Washington's message recommending the meeting of the situation with force was sent to Congress on March 3d of the same year, evoking the act of March 27, 1794 (1 Stat. L., 350), providing for the building of six frigates. Britain's Broad Arrow tribulations were now to be ours, to the grim and not altogether unjustifiable satisfaction, it is scarcely to be doubted, of the English Tories.

The first step toward the attainment of a respectable naval status consisted of the creation of a committee of captains who had seen sea-service during the Revolution[2] for the survey of available ways, means, matériel, etc., for the building of this initial unit of the American fleet. The committee reported in December, after a visit to the southern coastal regions, strongly recommending that the projected vessels be constructed of the live, or evergreen, oak indigenous to those coasts. This recommendation was based on proven worth. The qualities of this extraordinary wood had long been matter of general knowledge as had the fact that the best ships

[1] American State Papers, Foreign Affairs, 1, 409.
[2] Barry, Dale, and Truxton.

built in America were made of it,[3] a circumstance which, coupled with its comparative scarcity, had enhanced its value and, long prior to the Revolution, had made it a staple article of export to the West Indies and to Europe. It were almost superfluous to add that much of the material for this export trade, as well as much for use in domestic shipyards, was obtained according to the well-known "Dismal Borderer" formula.

Practical events abundantly justified the wisdom of this choice. Although only three of the frigates were built immediately, the conclusion of a peace with the corsairs causing an amendment of the original plans, those three speedily created naval tradition,[4] and that reputation for supreme excellence long possessed by American frigates out of which grew the British protest against "line-of-battle ships in disguise."[5]

But there was a reverse to this stirring picture of Neptunian glory. All of the circumstances connected with the creation of these splendid ships had not been splendid, or even pleasant, particularly for those charged with the responsibility for their creation. The word "profiteer" had not been coined in the 1790's, but that Secretary of War[6] McHenry had some inklings of the meaning of it is evidenced by his plaint of March 22, 1798, to the chairman of the House Naval Committee, wherein he said:

The effect of these and similar circumstances was to increase the expense of the wood vastly beyond its original value or estimated cost. But will not the public be always more or less exposed to like expenses, if, when ships are ordered to be built, the timbers and

[3] American Husbandry, I, 377; II, 75. Not, however, the most numerous ships.

[4] The Constellation under Truxton ended the naval war with France by her victories over L'Insurgente and La Vengeance in 1799 and 1800. The Constitution was prominent in later Barbary troubles and her taking of the Guerriere in 1812 first aroused a real naval enthusiasm among the American people. As "Old Ironsides," she has always been to the American Navy what the "Victory" has been to the English.

[5] Croker Papers, I, 39. That the American frigates in the War of 1812 did, upon several occasions, have an appreciable advantage over their British opponents as regarded weight of metal and strength of complement cannot be denied. Such American authorities as Mahan have so testified. But the American "edge" justified no such absurd charge as that it created a disguised ship of the line. Super frigate would have expressed it better.

[6] The Navy Department was not created till June, 1798. Till then naval affairs were handled by the War Department.

other materials necessary for their construction and equipment are to be sought for and purchased? When everything is thus to be suddenly procured will there not be found, in every community, too many persons ready to profit by the occasion? And who, under such circumstances, can estimate with precision, what an article will finally cost, or say, with certainty, when a work can be finished?[7]

More shines out through the lines of this old letter than the righteous irritation of a sorely tried officer. It is a lesson on the operation of economic law. It is a homily on preparedness fit for any age. Finally, it is a striking exposition, albeit an unconscious one, of the uncomfortable fashion history has of repeating itself. For what could be a more perfect parallel than the situation of Britain toward the close of the seventeenth century and that of America a century after? In each case naval conflict impended, rendering imperative the immediate procurement of great stocks of naval stores. In each case this public need had to face difficulty of procurement and rising prices. In each case there were "too many persons ready to profit by the occasion." Finally there evolved out of each trying situation precisely the same form of attempt at a remedy. Britain tried the Broad Arrow and put a no-trespass sign on individual trees. We tried our well-nigh forgotten little adventure in naval reservations, which amounted to the broad-arrowing *en bloc* of entire forests. The two gestures, differing in form, were identical in principle—the affirmation of the ancient theory that property in timber on unalienated land is in the State.

It would be a little too much to say that the "these and similar circumstances" of Secretary McHenry referred exclusively to Dismal Borderer activities. Transportation difficulties and labor desertions owing to the arduous and unhealthy nature of the work of the oak cutting in the humid southern swamps likewise played a part. But that such activities did help materially to complicate the situation there can be no doubt. The reference to the persons not averse to profit is eloquent testimony to that effect. The truth is simply that what might have been expected happened. With the nation in the market for live oak sufficient for six frigates a general scramble for live oak wherever standing ensued. Gentlemen not averse to profiting by the occasion sought to do so; and it became

[7] American State Papers, Naval Affairs, I, 38.

apparent to those at the head of affairs that in any future crisis it might very conceivably be impossible for the government to supply itself with this indispensable wood in the open market unless it were willing to pay through the nose. Or, to put it another way, the levying of tribute by a foreign enemy perchance, could not be forcibly resisted unless tribute were paid to Americans.

To this intolerable pass there was, to be sure, an alternative: the nation could create reserves of growing live oak trees and hold them against a day of need. True, this had its unpalatable features, involving, as it did, the brazen adoption of one of those hated policies of the "enemy of mankind,"[8] to resist which the sword had been drawn a scant quarter-century before. But with nations, as with individuals, stern necessity at times knows not consistency. So it came about that the last year of the eighteenth century saw us embarking upon that very course which had caused such "irritation" to the "woodsmen of New England" in the years before 1776. So it was that when Secretary of the Navy Jones informed the President of the Senate in 1814 that it took two thousand live oak trees, or the estimate product of fifty-seven acres, to build a "74," there was no note of apology in his declaration that "the importance of securing for public use all that valuable species of oak which is found only on the southern seaboard is sufficiently obvious."[9] If the Secretary was conscious of anything in the nature of a deadly parallel he gave no sign. He exhibited no compunction concerning "irritated woodsmen" or the "locking-up" of trees highly to be desired for commercial purposes. It is to be noted that he says "all"; meaning that the woodsmen would get nothing. Ground for "irritation," that, surely! And yet less than half a century had elapsed since the pine-tree flags had been raised at Bunker Hill. But the story can be told more graphically and with greater continuity by quoting *in extenso* from an official document of a later date.

This is the letter of Secretary of the Navy Southard, dated January 29, 1827, to the chairman of the House Committee on

[8] Dr. James McHenry—later the Secretary of War, quoted above—so referred to Great Britain in a will made in 1775 on the eve of his joining the Continental Forces as an assistant to Surgeon-General Rush.—Ingersoll, History of the War Department, 423.

[9] American State Papers, Naval Affairs, I, 321.

Naval Affairs—a letter called forth by an inquiry of that Committee, which inquiry in turn was originally set in motion by a House resolution presented earlier in the same month.[10] The general tenor of this resolution and the name of its mover we will do well to bear in mind. Out of the resolution there was destined to flow a bit of interesting history in which the mover was to bear a prominent, if somewhat reluctant, part.

The resolution, moved by Joseph M. White, Delegate from the then Territory of Florida, looked to an inquiry into the preservation of live oak on the public lands, and into the expediency of government plantations for the propagation of that timber for the future use of the navy. It also made inquiry as to what measures for live oak preservation had been taken by government theretofore.

Responding to the Committee's inquiry Secretary Southard said, *inter alia:*

In 1799, the year succeeding the establishment of this Department, the importance of preserving this timber was so far correctly estimated as to occasion the passage of a law, which authorized the President to direct a sum, " not exceeding $200,000, to be laid out in the purchase of growing or other timber, or of lands on which timber was growing suitable for the navy, and to cause the proper measures to be taken to have the same preserved for the future uses of the Navy." [11]

At that time, almost the only valuable live oak within the undisputed limits of the Union, was growing in the States of South Carolina and Georgia. By the subsequent purchases of Louisiana and Florida, large tracts of land on which this timber grows, were acquired.

Under the authority of the law before mentioned, the President of the United States, on the 19th December, 1799, purchased Grover's Island, containing 350 acres, for $7,500; and in April, 1800, Blackbeard's Island, containing about 1600 acres, for $15,000; both lying on the coast of Georgia. . . .

By a law of the 1st March, 1817,[12] the Secretary of the Navy was authorized, under the direction of the President, to appoint agents and a surveyor to explore and select so much of the land, on which live oak and red cedar were produced, as would be sufficient for naval purposes. The President was authorized to reserve the land

[10] January 12, 1827. See p. 8, 19 Cong., 2 sess., H. doc. 114.
[11] Act of February 25, 1799 (1 Stat. L., 622).
[12] 3 Stat. L., 347.

so selected, and penalties were provided for such as cut and carried away the timber growing upon it or other public lands.[13] The duties of the agents and surveyor were, by act of 15th May, 1820[14] assigned to the public surveyors, and by the law of 23rd February, 1822,[15] the President was directed to use the land and naval forces, and take other measures[16] for the protection of the timber on the public lands.

Under the law of March 1st, 1817, two agents[17] and a surveyor were appointed. They examined and surveyed the coasts of Alabama and Louisiana, and made . . . reports. . . . They resulted in a reservation, by the President, on the 29th February, 1820, of . . . about 19,000 acres. . . . The Commissioner of the General Land Office was directed not to offer these lands for sale. . . .

On the 5th of May, 1821, an agent was appointed,[18] . . . to guard the public lands in that quarter, . . . and take the necessary legal measures to bring to punishment those who committed trespasses. . . .

* * * *

Under the law of 23d February, 1822, . . . orders were given, on the 9th March, in that year, to . . . the brig Spark, to . . . prevent the cutting of timber upon the public lands, or transporting it out of the Territory. Similar orders have been directed . . . to . . . the few public vessels . . . employed on that coast. On the 19th March, 1824, the commanding officer of the West India squadron was directed to send, frequently, one or more . . . vessels. . . along the coast of Florida with a view to this object. The attention of the officers in the Revenue Cutters has also been called to the execution of this law. . . .

The length of the coast of Florida: the numbers of inlets, rivers, and harbors,[19] in which vessels loading with timber, can lie; the

[13] This statement is not strictly exact. The law covered all timber on naval reservations; but it applied to live oak and red cedar only on "other public lands."

[14] 3 Stat. L., 607.

[15] 3 Stat. L., 651.

[16] The exact wording is "such other and further measures as may be deemed advisable for the preservation of the timber of the United States in Florida." Apparently the law was not intended to apply elsewhere.

[17] James Leander Cathcart and James Hutton. Cathcart's journal of the survey is as interesting as fiction and in some respects stranger.

[18] Under just what authority is not clear. It was probably under the general authority of the act of March 3, 1821 (3 Stat. L. 642), providing for the gradual increase of the navy. See p. 14, 22 Cong. 1 Sess., H. doc. 178.

[19] A labyrinthine littoral utilized at divers periods in the smuggling (in or out) of other things than pilfered oak—things ranging from the "black ivory" of the early nineteenth century through blocade cotton and Cuban war materials down to the narcotic, alcoholic, and ethnic contraband of to-day.

sparseness of the population; the small number of the public vessels or other means which could be employed for the object; the difficulty of deciding whether the land from which the wood was cut, was public or private, have conspired to prevent the execution of the law from being, in all respects, efficient. Immense quantities of timber have been taken away, probably more than one half which was growing in positions easily approached, and on which, therefore, it was most valuable. The greater part has, doubtless, been taken from the lands claimed by individuals, and no accurate opinion can be formed of the amount which has been removed from the public lands. Still, it is unquestionable that many depredations have been committed, and the timber sold, in the West Indies, and elsewhere.

* * * *

As early, last Fall, as a proper regard for health would permit, an Agent was selected and sent to make an examination of the state of the timber on the coasts of South Carolina and Georgia, and in Florida.[20]. . . He acts under instructions of 23d August last, prepared by the Commissioners of the Navy, and is directed thoroughly to explore and examine the lands on which live oak is growing, ascertain its locations . . . and, particularly, the growth on the public lands, and practicability of increasing it. . . .

Partial reports only have yet been received from him. . . . His letters confirm the fact, that the most valuable part of this kind of timber has been removed from the whole coast, so far as he has proceeded. . . .

The value of this kind of timber is well known, and justly appreciated; it has latterly been used to a great extent, by our own; citizens, in building steam and merchant and other vessels, and been sought at high prices, by individuals and Governments in other countries.

It is impossible . . . to calculate . . . the amount . . . transported for sale abroad; the amount used in our own country; or the quantities still remaining, which the Government can procure and control. Its great importance, however, to the future wants of our Navy, justifies the declaration that it is our duty to use all the means in our power to obtain, preserve, and increase it.

In the present state of this important interest, I would respectfully suggest to you the following measures, as proper to be adopted:

1. The purchase of . . . tracts . . . particularly valuable . . . such as have . . . quantity of timber and . . . quality, on them, and are situated upon, or within a short distance of navigable water. . . .

2. Reservations in Florida and Louisiana, where the situation of the land, and the quantity and quality of the timber are suitable. The

[20] Under same authority as the "agents and surveyor" first appointed; *i. e.*, act of March 1, 1817.

power to make these reservations is supposed to be already in the Executive, but the means to make the surveys and to provide the necessary agencies to protect it from depredations require legislative provisions.

3. Planting trees upon the lands already owned by the Government, or such as may be purchased. It is probable that subsequent inquiry will show that no land need to be purchased for that object. . . .

* * * *

These three measures look to the benefit of the service at a distant period; but it is necessary to provide for more immediate wants, and therefore,

4. Provision should be made for the purchase of large quantities of timber. . . .

* * * *

The reasons in favor of this measure need not be minutely urged. It will secure to us a valuable article, which would otherwise be destroyed, or find its way to other countries, and return to us in a shape most calculated to make us feel the want of foresight we exhibit. It will lay up an article which may be perfectly preserved for many years, and grow better as it becomes older and more thoroughly seasoned. The timber laid up under the law of 1799 was used long afterwards and found as permanent and valuable as any ever used in the Navy. It will provide in peace an article which it is difficult and almost impossible to procure in war; especially in such a war as is most likely to be encountered by us; a war with a nation having a powerful military marine. The transportation of timber at such a time, to any of our navy yards, except, perhaps that at Pensacola, would be attended with immense hazard and expense. We should be compelled to rely on interior materials and suffer severely the consequences of our neglect. The measure, therefore, seems to be justified both by expediency and economy.[21]

The historical value of this letter as an original source document of the early years of a most interesting experiment—the first American attempt at forest administration in the interest of the nation as a whole—is a thing that speaks for itself.

Mr. Southard's letter makes it clear that the people who would have none of the Broad Arrow were now committed to it body, soul, and boots. America had impaled herself upon a horn of her own dilemma.

The emphasis of two other things by the Secretary stands out. One, the importance of timber accessibility, had been well under-

[21] 19 Cong. 2 sess., H. doc. 114.

stood in New Hampshire and Maine in the old mast tree days.[22] The other, the efforts put forth by foreign governments to obtain live oak, likewise has a ring of the echo about it. Foreign governments had also hankered after New England masts and spars, and the sorely irritated woodsman had found purveying to that demand, in contravention of the Broad Arrow, a thing not altogether unprofitable; so very much the other way, indeed, as to justify taking a chance on the ubiquity of the Surveyor General.

And finally, and especially, it is to be noted that Mr. White's suggestion as to the artificial propagation of live oak is given approval; although doubt is expressed as to the necessity for acquiring land for the purpose; doubt that, at first blush, would seem to be extremely well-founded. Why buy land for a live oak plantation with millions of acres already on hand?

Nevertheless, within two years from the day that eminently conservative expression was uttered, land was purchased by the United States for precisely that purpose. The public officer responsible for the consummation of that purchase, moreover, was the very gentleman who had doubted the necessity therefor. Out of this circumstance there seethed up an engaging little scandal beautifully illustrative of the colorful hurly-burly of the hard-hating, hard-hitting Jacksonian era; illustrative, likewise, of the unchangeability of human nature, particularly the political angle thereof.

Thoroughly to comprehend that episode it is necessary to take a glance at its historical and political vicinity, to say nothing of its geographical vicinity, and in so doing it will be as well to begin with the day, March 4, 1825, when John Quincy Adams became President of the United States.

Now despite all that can be said about Mr. Adams, he was no small-bore man. He was able, he was courageous, he was passionately patriotic, and, finally, he was nobody's fool—particularly in the great fields of world affairs and international relations. Specifi-

[22] The Secretary's letter may have had something to do with the issuance of some instructions by the Commissioner of the General Land Office, on November 8, 1830, to the Surveyor General at Tallahassee. After directing the deputy surveyors to "notice in their progress" and record in their field notes all public lands containing valuable naval timber, they enjoined them to ignore all timber more than three miles back from raft navigation, declaring that the reservation for naval purposes of any timber lands more remote from navigation was not contemplated by the Department.

cally, with regard to our present theme, he possessed, years before the time of Mahan, something more than an inkling of the significance of sea power.[23] He knew that the rôle played in the development of England into a world power by sail-of-the-line and frigates had been much more than a merely ornamental one. And, finally, having been long behind the scenes, he must have known more than a little about the rôle that wood had played—and was playing—in keeping those famed "Bulwarks of Britain," existent and staunch. He must have known something about the problem in British dockyards presented by the getting of wood for new construction and for the repair of old ships. He must have known that there had been times when that problem had been acute; times, indeed, when it had been menacing; when the very national existence of Great Britain might have been said, and that without any alarmist stretch of the imagination, to depend upon a few cargoes of wood.

And there were other things Mr. Adams must have known. For example, when, as Secretary of State, in 1819, he was dickering with the Spanish Minister about the purchase of Florida, he must have known that live oak was the wood of woods for the framework of ships, and that the great territory he was seeking to acquire for the United States not only contained within its borders by far the greater part of that wood then in existence, but also contained, in its soil and its climate, probably the most ideal combination of conditions for its growth. It may be but a fancy of the writer but he cannot forbear believing that Mr. Adams was consciously and deliberately looking a long way ahead when he was engaged in the Florida negotiations; and that he had much more in mind than the mere acquisition of a piece of territory that would round out our holdings geographically in the southeast—the said much more consisting of the maritime welfare of America far in the future, the naval might indispensable thereto, and the wooden raw material indispensable to naval might. The writer believes, in short, that Mr. Adams saw in Florida a magnificent opportunity to obtain for America that self-sufficiency in naval material, the lack of which had been a handicap and a source of peril to Britain. That in doing so he should have overlooked altogether the possibility of some such radical overturn in the realm of naval construction as that

[23] A knowledge that Mr. Adams acquired to a certain extent by inheritance, as we shall see later on.

which the Monitor and Virginia ushered in at Hampton Roads less than half a century later does not detract from the bigness of his vision. There were precious few people at that time who dreamed that the cumbersome wooden ship-of-the-line would not continue to dominate the naval scene for centuries.

But whatever Mr. Adams may have believed and foreseen, consider the naval happenings of his administration and form your own conclusions. The first of those happenings was the acquiring, in 1825, of land at Pensacola for the establishment of a navy yard, under authorization contained in the act of March 3, 1825 (4 Stat. L., 127).[24] The next was the actual establishment of the yard in the following year, mechanics being sent from Boston for the purpose. The next was the live oak reconnaissance along the coasts of South Carolina, Georgia, and Florida in the fall of 1826, to which allusion has already been made in Mr. Southard's report quoted above. And this brings us to the end of the first half of the Adams administration, and to the eve of the action that called forth the report of Mr. Southard.[25] Summarized, the end of 1826 saw the navy established in a new station in the heart of the region in which the navy's most sought-for wood grew; and it saw Mr. Adams informed by the agent he had sent to reconnoitre that the natural growth of live oak in the region investigated had been greatly depleted. That agent's letters confirmed "the fact that the most valuable part of this kind of timber had been removed from the whole coast; that live oak had been a staple export." On top of all which came the Hon. Mr. White, of Florida, before 1827 was two weeks old, with his suggestion about artificial propagation,

[24] This legislation was enacted, it is true, before Mr. Adams took office. The writer has not bothered to inquire minutely into the influences that brought it to pass. But assuming that our foreign policy as directed by Mr. Adams while Secretary of State had nothing to do with it, its general coincidence with his views regarding our naval future is so obvious as to speak for itself.

[25] Very early in the Adams administration, Mr. Southard had come into contact with the live oak question from a general rather than a naval angle. For a short time at the beginning of the administration he was Acting Secretary of the Treasury, to which department the General Land Office was then subordinate; and on March 19, 1825, the Commissioner of the Land Office addressed him as follows: "The preservation of the live oak timber of Florida being an object of much interest to the Government the measures to be pursued to attain that object are entitled to the serious consideration of the Executive Government."

thereby firing the opening legislative gun for the first national attempt at reforestation made in America. The writer does not claim that these circumstances were related. But there are indentual features about them that are worthy of some consideration. For example, when we speak of the suggestion made by Mr. White in his motion of January 12, 1827, as " his suggestion " are we entirely accurate? Was it Mr. White's own thought, or was Mr. White acting as an administration mouthpiece?

Mr. White, or Colonel White as he seems to have been generally called,[26] was a Kentucky lawyer, who had gone south to grow up with the country when we took over Florida from Spain. He settled at Pensacola, acquired a law practice and a political following, and eventually got himself elected territorial delegate to the Congress that came into being the day Mr. Adams became President. Thereafter he got himself elected to the five succeeding Congresses. That is getting a little ahead of our story, but the fact is thrown in here to give some inkling of the quality of the man. To get one's self elected to six Congresses, hand running from such a bowie-knife and horse-pistol community as was Florida in the Jacksonian epoch, without being a Jackson man—and that the Colonel most emphatically was not—is fairly good evidence of one's possession of certain qualities.

The Colonel, indeed, was, if anything, the reverse of a Jackson man. He was not exactly an Adams man; but he stood in excellently with the Adams administration. He and Mr. Adams were acquainted prior to March 4, 1825, and they became much better acquainted thereafter. They frequently put their legs under the same mahogany; they frequently conferred. Mr. Adams depended upon Colonel White for Florida information. In 1828, when, in the work of adjusting the badly snarled land titles in Florida, it became necessary to appoint a special assistant to the Attorney General to compile a translated collection of the French and Spanish ordinances, the President chose Colonel White to do the work.

To the circumstances just enumerated; Mr. Adams' appreciation of sea power, his appreciation of the relation of the forest thereto, and his appreciation of, and intimacy with, Colonel White, we must now add another and a final one. That circumstance is the fact

[26] Mr. Adams' diary calls him Judge White.

that Mr. Adams was a confirmed tree enthusiast. For many years before he became President he had dabbled extensively in tree-planting experiments. He maintained an amateur tree nursery at his country home, and diligently studied his Evelyn and his Du Hamel. Things being so, it was perhaps as inevitable as anything well can be in this world that Mr. Adams should have reacted to the naval timber question with a magnificent, but—for the day—utterly impractical conception; that he should have visioned himself as the inaugurator of a wise and orderly system that would enable America gradually to cut loose altogether from a dependence for naval timber upon natural growth, with its unavoidable Broad Arrow implications, its timber thieves, and its gouging contractors "willing to profit by the occasion"; and gradually to adopt a system of supply from tree plantations established for the purpose, and so conducted that their regular yearly increment would provide a safe margin in cubic content over the amounts ascertained to be necessary for new construction and repairs. In a word Mr. Adams was thinking along what are to-day referred to as sustained yield lines. It was, indeed, a magnificent conception, but it was many, many years ahead of its time. It was too orderly, too disciplined a conception for a people with the pine-tree flag only half a century behind them and with "inexhaustible" forests all about them.

So when Colonel White made his argument on January 12, 1827, and told about the Czar of Russia sending to America for sundry barrels of live oak acorns to plant in the Crimea and about the oak plantations for the navy established in England at Evelyn's suggestion, he may have been uttering his own thoughts and spontaneously advocating his own theories. Or he may have been saying that which Mr. Adams, who had lived long in both Russia and England, had said to him. And when Colonel White perorated that a wise policy is one that looks to the nation's welfare in years to come and does not concern itself with the present only, there again the hand may have been the hand of Adams and the voice the voice of White. Probably it was a bit of both; with Mr. Adams suggesting, and the Colonel sincerely enough falling in with, a policy in which the Colonel believed because he considered it good for the navy, good for Florida, good for Pensacola, and good for Joseph M. White.

But whatever was the way of it, it should be understood that at the initial airing of the proposal it was not advocated that the

scheme should be plunged into forthwith on a great scale, and that all other methods of obtaining timber should be given over. The Colonel told the House that so long as the then-existing uncertainty with regard to most of the land titles in Florida was allowed to continue it would be useless to adopt any measures looking to the protection of the live oak on the public lands in that territory. Timber speculators and contractors, he alleged, were cutting and carrying off right and left. So were agents of the British navy, who were getting timber cut to mould at the stump, so to speak, in the forms of sternposts, heart hooks, and knees. Moreover, the Colonel declared, there was no way to hinder them; because, if their activities were called in question, they could—and did—set up the claim that they had title under some Spanish grant;[27] which claim, despite the fact that it might be patently ridiculous, could not be successfully controverted with the title situation in general at sixes and sevens. Both houses of Congress, the Colonel reminded his auditors, had been urged by President Adams to complete the correction of this unhappy situation[28] but they had done nothing. He entreated them, therefore, to move at once toward the curing of the title confusion—to take action that would confirm finally all honest titles and definitely reject all bogus ones. Then, with exact knowledge as to what belonged to whom in Florida, government would be in a position to protect its property "with vigor." Meantime, he declared, it would cost nothing to make some experiments in the cultivation and propagation of live oak on the tract acquired for the navy yard at Pensacola. The live oak, declared the Colonel, grew "everywhere in our light and sandy soil."[29]

[27] The same statement is made in a letter from George Graham, Commissioner of the General Land Office, to H. A. Storrs, Chairman of the Naval Affairs Committee of the House of Representatives—evidently in response to an inquiry—dated just seven days after the day of the Colonel's speech.

[28] Congress took the action urged by Colonel White over a year later in the act of May 23, 1828 (4 Stat. L., 284), "An Act supplementary to the several acts providing for the settlement and confirmation of private land claims in Florida." The earliest legislation had only gone to the difficulty locally. It was under authority granted in the 1828 act that President Adams made the appointment of Colonel White as special assistant attorney general.

[29] An opinion considerably at variance with other opinions of the day, and rather contradictory of views later expressed by White himself. The live oak fit for ship frames did not grow, and apparently could not, in any land in Florida save the sort known as hammock land. But there was much confusion of thought, apparently, on this point at the time.

All that would be necessary, he said, would be to keep fires out of the tract selected after the transplanting had been made. Apparently the only sort of cultivation the Colonel had in mind was that of young trees produced by natural growth. He seems not to have considered growth from the acorn, a circumstance to be borne in mind and remembered later.

All this, let it be repeated, may have been entirely spontaneous; entirely on the Colonel's own. Yet it has about it a certain resemblance to the game of whist in that it fulfilled most efficiently the objects of a "lead." Played on January 12, it was "played up to" less than three weeks later by Mr. Adams' Secretary of the Navy in the manner illustrated by the lengthy quotation set forth above. And now, bearing in mind what Mr. Southard had to say about the extent to which live oak had been cut and shipped out of the country, about the suggestion for artificial propagation, and about the desirability of legislation making provision for surveys and the prevention of depredations, let us note how the cards fell as the hand was played out to the end.

The legislation suggested was very speedily forthcoming. In "An act for the gradual improvement of the navy" passed about a month later, on March 3, 1827 (4 Stat. L., 242), there was incorporated a section (3) authorizing the executive branch to take "proper measures to preserve the live oak timber growing on the lands of the United States" and also "to reserve from sale such lands, belonging to the United States, as may be found to contain live oak, or other timber in sufficient quantity to render the same valuable for naval purposes." It is easy to see how this legislation strengthened the executive powers with regard to a more exact ascertainment of the national resources in live oak and other naval timber; as well as with regard to its protection from spoliation when the said ascertainment had been completed. It is not so easy to see, however, wherein it made any specific authorization of artificial propagation and cultivation or of the purchase of lands therefor, except under a rather broad construction of the phrase "to take the proper measures to preserve."

That the administration, however, certainly interpreted it that way, so far as the propagation part of it was concerned, is made evident by Mr. Southard's annual report to the President, for the year 1827, communicated to Congress in the following December.

Therein Mr. Southard reports the establishment of live oak reservations in Louisiana [30] and Alabama, as well as one in Florida on a tract adjoining the navy yard at Pensacola. Upon this tract the planting of live oak acorns had been begun by the commandant of the Pensacola yard under orders from Washington. The reconnaissance begun in the preceding fall by the specially-appointed surveyor, alluded to in Mr. Southard's special report to the Naval Committee of the House on January 29, had been concluded by May 12. The coast of East Florida had been explored as far as Mosquito Inlet, but there had been found, said Mr. Southard, much less live oak than had been hoped for. Another surveyor had been appointed on November 12, under the new authority of the law of March 3, 1827, to examine the coast of West Florida. It was manifest, concluded Mr. Southard, from information already obtained, that the nation would be obliged to plant extensive tracts of land with the live oak, or, in a few years, "be deprived of this most valuable timber for the uses of the Navy."

Thus, Mr. Adams' Secretary of the Navy in the latter part of 1827. It is both interesting and instructive to note at this point how the mind of Mr. Adams himself was functioning in the middle part of that self-same year. Let us read, therefore, from the famous Diary, an entry made on August 12, 1827, at Quincy, Mass.:

I have had made four small wooden seedling tubs, and this afternoon planted five tamarind seeds and eight pear seeds in No. 1, and five tamarind seeds and six pear seeds in No. 2. There is a question whether the seeds or stones from fruit of grafted or budded trees will germinate, and, finding nothing upon the subject in any of the books I have read, I am inclined to bring it to the test of experiment. In my summer house nursery two more of my shagbark walnut trees have come up making now twelve within the walls. The horse chestnuts and the oaks appear to have come up all nearly at the same time; but both here and at Washington the walnuts seem to come up in succession all summer through. In this branch of natural history my experiments have come up so late in life, and are yet so little governed by a system pointing directly to useful ends that they may perhaps end in mere trifling, but that is not my intention. On the 8th of October, 1804, I planted perhaps forty walnuts in this garden, several of which came up the ensuing summer. One of them was transplanted to the garden of the house where my father was born, and lives, but is not yet in bearing; one

[30] In addition, that is, to those set aside February 29, 1820, *supra*, p. 33.

only remains on the spot where the nut was planted, and, at the age of 21 years, last autumn bore perhaps two hundred nuts. Most of these I planted here or at Washington, and there are now thirteen of them here and twelve at Washington growing. But last year was my first experience of planting acorns, and that has been partially successful here and failed at Washington totally. Colonel Perkins told me yesterday that he thought our pasture white oak, well-salted, as good for ship-building as the best live oak. This is encouragement for me to persevere in my experiments which I would leave as at once a charge and an inheritance to my children.

We have now got to a point where we can thoroughly comprehend the situation that had developed by January 1, 1828. The Adams administration had satisfied itself of the desirability of going in strongly for the plantation idea and of its legislational authorization to do so. And it had taken steps to lay the foundations for the furthering of that ambitious project on an elaborate scale. The plan, in large outline, was to establish a total area for artificial propagation of some 60,000 acres as close to the Pensacola yard as possible. Half of this area was to be on a peninsula which lay just across Pensacola Bay from the yard, between the bay and the Sound of Santa Rosa. The balance was to comprise the greater part of the territory extending from the yard itself to Perdido Bay, the next considerable estuary to the westward. This last included the area mentioned in Mr. Southard's December, 1827, report as having been set aside "adjoining" the yard. The peninsula area had not yet been formally reserved, but that action had been determined upon. The yard, in other words, was to be practically surrounded with a live oak plantation some 60,000 acres in extent, of which plantation it was to constitute the protective and administrative center; as well as the original repository for, and distributing agency of, the resulting growth as it was harvested. It is hardly necessary to say that no such grandiose idea was in mind as the immediate cultivation of the entire reserved area. The creation of the reservation was only to be a first step. The propagational part of the scheme was to be begun on a modest scale and gradually extended.

But in the creating of the reservations a difficulty developed. Almost all of the areas desired were in the public domain and hence could easily be set aside under the 1817 and 1827 laws for the projected purpose. But both on the Santa Rosa peninsula and

in the area adjoining the yard to the west there were some small holdings, aggregating something like three thousand acres, which had passed into private possession during the Spanish régime, and the titles to which had later been confirmed by the title commissioners appointed by the United States for West Florida under some of the earlier legislation to correct the Florida title situation, to which allusion has already been made.

Now it was on the 30,000-acre tract contained in the Santa Rosa peninsula that the first direct propagational work was proposed to be done, because for several reasons this site was regarded by those enthusiastic for the scheme as ideal for the purpose. The fact that it was almost entirely surrounded by water simplified the problem of protection, assured ease of transportation to the yard, which was only seven miles away, and, according to the best information then extant regarding live oak propagation, made for a better and more rapid growth of the trees. But about midway of the peninsula there was a tract of land in private ownership which extended from the bay to the sound and thus cut the proposed plantation squarely in half. The tract was a comparatively small one comprising some 1600 *arpents* (*i. e.,* about 1400 acres), but its situation rendered it of rather vital importance with regard to the proposed experiment. Mr. Southard and Mr. Adams naturally desired, for convenience of administration and for greater certainty of control, to have a tract that was continuous and complete, and that did not contain within its very heart individual interests with their accompanying possibilities of confusion and complication. And just as naturally it occurred to them to correct the undesirable situation by purchasing the privately owned tracts and making of them and the surrounding public lands, when set aside, one complete and undivided holding.

It is at this point that what ultimately developed into the Senegambian in the wood pile comes into view—that is to say, the actual ownership of the privately-held land. It chanced that those 1600 *arpents* were owned by Colonel White, whose interest in the general scheme of propagation has already been made sufficiently apparent, and by Henry Marie Brackenridge, Esq., a close friend and political adherent of the Colonel. Those of you who remember your Washington Irving's Astoria may recall this gentleman. So may those of you who have explored the byways of American history of the first quarter of the nineteenth century. We have not the time to go into

the details of Brackenridge's interesting and colorful career here. It will be enough to say that he, like Colonel White and many another lawyer, had gone to Florida, shortly after Mr. Adams had struck his bargain with Spain, to grow up with the country. On his way thither he had managed somehow to fall in with one Andrew Jackson, who, at the moment, was bound to Florida also, to take it over from Spain as the first American governor. That encounter was a lucky one for Brackenridge, for thereafter his rise was rapid. He became Jackson's secretary and served in that capacity during the stormy period when the new governor was casting his Spanish predecessor into the *calabozo* and indulging in other characteristically vehement actions. Then, by appointment of his chief, he became *Alcalde* of Pensacola. The final mark of that chief's regard was a buzzing into the ear of President Monroe to the effect that Brackenridge would make an excellent Federal judge for West Florida. That was in 1822. He stayed on the bench for nigh ten years. He might have stayed much longer had he remained in the good graces of his grateful patron. But this he did not do. In fact, despite his very great obligation to that tremendous personage he seems to have been always a bit contemptuous of him. He was discreetly contemptuous, however, and time passed before the object of that contempt became aware of it. The Jacksonian eye had probably been opened by the time Brackenridge's first term expired in 1826, and that gentleman was up for reappointment. But then nothing could be done. John Quincy Adams was President of the United States. Joseph M. White was Florida delegate in Washington and had access to the presidential ear. And Judge Henry Marie Brackenridge, delivering an eulogy upon the life and character of John Adams, at the Pensacola court house, on August 15, 1826, doubtless felt as secure as he felt confident that the terrific thing that was destined to occur in the fall of 1828 could never by any possibility occur. He may have felt less confident by the time January of the last-named year had rolled around; but even so it had not occurred yet; he still had two years to serve on his second term; the government at Washington still lived; Joseph M. White was still delegate; and he and the said White had 1600 *arpents* of land at Santa Rosa that the President and his naval secretary wanted sorely for the inauguration of the plan that was probably closer to the heart of Mr. Adams than any other plan of his administration.

There was thus constituted, it is scarcely necessary to point out to the reader, by the sum of all these little circumstances that have been detailed, a situation with violent possibilities. So far as the writer is aware no suggestion was ever made by Joseph M. White, of Pensacola, or Henry Marie Brackenridge, of Pensacola, that the enlargement of Mr. Adams' researches at Quincy should be carried out, as one might say, in Pensacola's door yard. Colonel White declared later with great vehemence that no such suggestion had ever been made.[31] But there are the facts. Human nature is human nature. And politics is politics.

Now poor politician as he was, it is a moral certainty that Mr. Adams must have sensed the dynamite that the situation contained. Any other suppostion is unthinkable. The most innocent and simple-minded of men must have seen it. The fact that it was faced in the only wise way to face a delicate situation, *i. e.*, with perfect frankness and candor, only goes to prove that the administration appreciated to the full exactly what confronted it.

With respect to this the Adams administration was careful to take no chances. It did not rely upon the third section of the 1827 law with its general authorization "to take the proper measures." There is reason for believing that both Mr. Adams and Mr. Southard thought that that authorization was broad enough to cover the purchase of land. But in this instance it was not deemed wise to proceed on that assumption. Mr. Southard decided, "upon a nearer view of the law, that he had no authority to purchase without a special act."[32] He therefore, on January 29, 1828, entered into agreements with White and Brackenridge to purchase their lands at stated figures, provided Congress should authorize him to do so. Upon the same day he wrote a letter to the Chairman of the Committee on Ways and Means of the House of Representatives, detailing the situation and requesting a special grant of authority, explaining that, if the authority were granted, no additional appropriation would be necessary, as the requisite funds could be expended from the appropriation made under the 1827 law for the "gradual improvement of the Navy." The matter

[31] See letter of White of January 22, 1831, to Chairman of House Naval Affairs Committee in American State Papers, Naval Affairs, IV, 113.

[32] The language quoted is that of Colonel White in the letter of January 22, 1831.

appears to have been thoroughly explained to Congress, which body at that time was of anything but a pro-Adams complexion, and no objection was interposed to the proposition.[33] Accordingly, in the naval appropriation act passed on the 19th of the following March (4 Stat. L., 254), the President was authorized to purchase "such lands" as he might think "necessary and proper to provide live oak and other timber for the use of the Navy of the United States," up to a limit of $10,000. Considering the measure at the time, as a senator from North Carolina, was a gentleman named John Branch. If he entertained any violent feelings of opposition to it he did not disclose them.

Thus assured of an unquestionable right of way, Mr. Southard proceeded to go ahead with the scheme as rapidly as possible. The purchases of the Santa Rosa tracts from White and Brackenridge were consummated by the fall of 1828. Some further purchases, totalling about two thousand *arpents,* in the area adjoining the yard on the other side of the bay, where the other reservation extending to Perdido Bay was to be established, were also made. They were made, incidentally, through Colonel White, who represented the actual owners as agent and attorney-in-fact.

Meantime, the question of a directing head for the experiment came up and was settled in an interesting manner. In the course of a correspondence between Southard and Brackenridge concerning the details of the purchase of his holding at Santa Rosa the Judge, with delightful naïveté, made the suggestion that he be placed in charge. "Although I do not pretend to be equal to Solomon," he wrote, "for this would be vanity and vexation of spirit, yet I may say, with truth, that there is no tree or shrub in this country with whose history, properties or habits I have not an acquaintance." He explained that he had occupied the tract for several years in order to avoid the yellow fever in Pensacola; that he had formed an attachment for it and hated to leave it; and that his appointment as superintendent would therefore be mutually advantageous to him and to the government. His judicial duties, he further explained, afforded him sufficient leisure to give the project proper attention provided he could have an overseer to attend to detail and be on the spot during his absence at court.

[33] See letter of Southard to McDuffie, American State Papers, Naval Affairs, III, 945.

The Judge's representations, fortified, it is scarcely to be doubted, by the indorsement of Colonel White, made a favorable impression upon Mr. Southard, and through him upon Mr. Adams, and the upshot was that he was appointed to the superintendency of the plantation on December 6, 1828, and started work upon the project on the 18th of the month following with an overseer and a force of negroes. Thus did Henry Marie Brackenridge, lawyer, pamphleteer, and soldier of fortune, became America's first forester, and director of America's first forest experiment station. It should be noted in passing, likewise, that in the course of the negotiations leading up to his attainment of those distinctions he became a pioneer in American forestry authorship. The writer is not prepared to go so far as to assert that his pamphlet "On the Cultivation of Live Oak" was the first bit of purely American writing dealing seriously, and not inadequately, with the handling of a tract of timber along lines corresponding in many respects to the forest thought of the present day. Yet it was certainly one of the first, and one of the most readable. Foresters of to-day can find in it much to commend, especially along the lines of fire prevention, the importance of which Brackenridge thoroughly comprehended. Even in its criticizable features—and it has plenty such—it is interesting. It exaggerates the importance and the ultimate results derived from the naval oak plantations started in England at the suggestion of Evelyn. Likewise it is a bit over-optimistic in its economics—a vice from which American forestry literature of a much more recent day cannot be said to be entirely free.

The little essay of the Judge first appeared in the form of a letter written from Santa Rosa, on June 1, 1828,[34] to Secretary Southard. That gentleman called it forth, when, in the course of the correspondence between himself and the Judge relative to the superintendency of the new experiment, he requested the Judge's "opinion of the best mode of clearing out and planting the whole tract with live oak." It is rather to be suspected that the Judge spread himself a bit in complying with that request; put himself on his best literary and silvicultural behavior, as it were. For it is entirely conceivable that he possessed in very strong measure what the language of to-

[34] The Judge had it published in pamphlet form in Philadelphia late in the following year along with a number of his orations—including the eulogy on John Adams.

day terms a "hunch" that his arboreal dissertation would have to stand inspection before a more highly placed personage than a mere Secretary of the Navy—a personage whose hobby was trees, whose ambition was to succeed himself as President of the United States, and whose prerogative it would be, in the event of that ambition materializing, to name the Federal judge for West Florida when the term of the then-incumbent should have run its course. The outstanding fact is that, whether the Judge cannily figured on his live oak letter receiving exalted consideration or not, it did receive consideration of precisely that nature. To judge from the "Diary" its consideration was one of the most important pieces of public business that was transacted on July 5, 1828. Mr. Southard and Mr. Adams held a sort of executive session over it that day. The discussion was principally with reference to the matter of planting acorns, a thing the Judge had declared to be unnecessary because of the great numbers of small live oaks in existence capable of transplantation or of cultivation *in situ*. With this point of view Mr. Southard was in agreement. But he was unable to convince Mr. Adams, whose head was full of his own experiments as well as of the *dicta* of Evelyn and Du Hamel. The result of the conference was that the Judge's appointment to the superintendency was determined upon; but Mr. Southard was instructed to insist upon his setting aside and preparing a tract of two or three hundred acres to be utilized exclusively for acorn planting, and for careful observation and recording of the progress of the resulting seedlings. In explaining his decision Mr. Adams said:

> But the natural history of the live oak has many singularities and has not yet been duly observed. Among my reasons for desiring that a considerable plantation of them should be raised from the acorn is, that their growth to maturity may be observed, and perhaps a better knowledge of them be obtained.

At the same time the determination was reached to entrust the experiment at Santa Rosa to the Judge, though Mr. Southard's letter formally appointing him was not despatched till the 6th of the following December. At first glance this hiatus seems extraordinary, but only at first glance. The time, be it remembered, was 1828, the year of the great overturn. Speaking figuratively and politically, the heavens fell in the autumn of that year, and the land was filled with

cataclysmic thunders. In the meantime the control of the national government passed from the "settlements" to the frontier; from the exclusive possession of the gentry, or the college-bred, to the hard-bitted folk of long rifle and homespun, to whom the forest was first of all a thing to be conquered,[35] the folk who knew nothing about Evelyn and Du Hamel and cared less. The thing that had been thought impossible came to pass. Andrew Jackson, who spelt Europe u-r-o-p, was elected President of the United States.

In his last annual message to Congress, delivered December 2, 1828, President Adams spoke glowingly of the act of March 3, 1827, and of the provision under it for live oak "reproduction, to supply at future and distant days the waste of that most valuable material for shipbuilding." And the last annual report of Secretary Southard to the President, transmitted to Congress on the same day, told of the purchase of the tracts at Santa Rosa and elsewhere for "about $9000,"[36] and the placing of a part of the land thus purchased under the care of "suitable persons," and the making of "arrangements" . . . "to prosecute the planting and cultivation of live oak upon it." In the same connection, Mr. Southard, in speaking of the live oak already growing upon the public lands, took occasion to say that:

> Trespasses continue in some extent to be made. . . . Every means has been taken both by this and the Treasury Department to repress them and with some success. But the inlets are so numerous and the coasts of Florida are so extensive that the vessels in the Navy and Revenue Service are not competent to watch every part of it without an entire neglect of other duties.

Four days after this report to Congress the Judge's orders were sent on their way, as already related. He was in effect told to go ahead in exact accordance with the plan he himself had drawn up except as to the one matter of acorn planting. He was to be paid $400 a year for his directoral efforts, which, considering the then value of the dollar, and the fact that the job was a spare time affair, to be looked after in the intervals when the judicial mill was not

[35] Precisely as it had been to the forbears of the gentry and the college-bred in a day not so long before, when they too had worn homespun and toted long rifles—or puritanical blunderbusses.

[36] Note the amount—some $1000 less than the sum allowed by the authorization to purchase in the act of March 19, 1828.

grinding, was not so bad. He was also to have an overseer for the direct furthering of the work at $500 per annum, and was authorized to employ twenty laborers for one year; and to purchase the necessary equipment, erect the necessary buildings, etc. And, further, he was given to understand that he was at liberty to continue to occupy his home and to use some twenty acres adjacent to it as he pleased for as long as he might decide. All in all the Judge may be said to have been doing very well by Santa Rosa. When the Adams administration ceased to exist it left behind it the Santa Rosa establishment operating under the Judge and his overseer, two live oak surveyors hunting trees in West Florida, and one live oak "agent," who had been appointed by Mr. Southard on April 10, 1828, under authority of the 1827 act, to prevent depredations on the live oak on public lands in East Florida. In addition to the personnel enumerated there was also on government pay at the time, on live-oak account, the agent who had been appointed in 1821 to guard the lands which had been set aside in Louisiana as a result of the Cathcart and Hutton survey of 1818-1820, as well, apparently, as all other public lands in Louisiana which might contain timber useful to the navy.

There has been introduced into this narrative the name of John Branch, of North Carolina, under whose eye as a Senator from that state the representations of Mr. Southard to obtain his special authorization for the Santa Rosa purchases had passed. At that time his first term in the Senate was drawing to a close. He had been re-elected, however, in the general landslide that carried the Hero of New Orleans into the Presidency. He was destined to serve but an infinitesimal portion of that term, however, for he was selected by the said Hero to take over the direction of naval affairs from the hands of Mr. Southard. Mr. Branch proceeded to make forest history by unmaking the great design of Mr. Adams.

Scarcely had he assumed his portfolio before he manifested an interest in Santa Rosa that was most assuredly not a friendly one. Thus, on April 6, 1829, after he had been at the head of naval affairs but a month, he issued orders to the Board of Navy Commissioners [37] directing them to proceed to Florida to make certain

[37] The board created by the act of February 7, 1815 (3 Stat. L., 202), consisting of three officers of the navy of a rank above the grade of post captain, to relieve the Secretary of all duties not of a purely executive nature. This arrangement lasted till the present system of bureaux was established by the act of August 31, 1842 (5 Stat. L., 579).

investigations and inspections, one of the most important of which was to be a thorough going-over of the lands purchased from the Colonel and the Judge and a determination of their value. And, on the day following the issuance of this order, he wrote a brief letter to the Judge in a strain quite different from the one of cordiality Mr. Southard had been wont to employ. The Judge was told that the Commissioners were on their way, and was directed to suspend all operations on the plantation until further orders.

The President of the Board of Navy Commissioners at that time was that able American sailor, Commodore John Rodgers, the same gentleman who some fifteen years before had attended to the rough handling of the H. M. S. "Little Belt" off the Capes of the Chesapeake, and had later made that strategic cruise at the breaking out of the War of 1812 that is so highly commended by Mahan. He executed his orders with regard to Pensacola and vicinity with corresponding promptness and thoroughness. In fact, he attended personally to the inspection of the White and Brackenridge tracts.

The Commodore was back in Washington writing his report by early July, which for those days was pretty quick work. He found that only a small proportion of the lands was hammock land—the land in which the best live oak commonly occurs. He concludes his report by saying that, though the hammocks might be made to produce live oak, there was but a small part of the entire tract that for the purposes of cultivation was of any value whatever. And yet, in the body of his report, he speaks of finding large live oak stumps which furnished, "if not conclusive, strong presumptive evidence that a soil that had once given growth to such timber might, with care and proper management, be made to produce it again, if not by transplanting young and thrifty trees, at least by sowing acorns taken from trees of large growth, while in a sound, healthy state."[38] He also reported the presence of some twenty thousand live oak trees, of which some 170 were full grown and some 120 half grown. He also states, in a general way, that the condition and quality of the lands were about what they had been claimed to be. Unflattering as this report was, speaking generally, it certainly contained no evidence that the government had been badly "stung" in the deal. For one thing 170 live oak trees of even medium size were

[38] American State Papers, Naval Affairs, III, 943.

worth at the time, after deducting all expense for cutting and transporting to the navy yard, something more than the entire price paid for all the tracts purchased. For another, the primary object of the transaction, it will be recalled, was not an investment on the part of the Adams administration in existing values so much as it was to secure a consolidated holding for the entire proposed reservation, a strategic consideration that alone was worth not a little.

Nothing was done in 1829, and the Judge and his overseer were evidently relieved of the aforementioned suspension order of April, and were directed to continue to carry on. At any rate they did carry on; they reported progress from time to time,[39] and they were paid for their work as per the agreement of Mr. Branch's predecessor. But though nothing was done in the way of actual suppression, evidence sticks out here and there that the administration continued to keep an eye on Santa Rosa and that it was a distinctly bellicose eye.

We pass from 1829 with a brief notice of what Mr. Branch had to say in his summing-up for the year in the annual report of the Department. The Santa Rosa experiment he ignored entirely. As to the live oak on the public lands, he said it was being made away with by "the unprincipled of all nations," and that "measures more coercive in their character than those hitherto employed" would have to be adopted if the said unprincipled were to be restrained. He said that it had "been the practice to rely on the vigilance of agents, distributed over different districts on the coast." This system he declared to be utterly ineffective because of the swampy, jungly character of the terrain they were expected to guard. He recommended its discontinuance and the substitution therefor of a "marine force" that could approach the theatre of illegal cuttings from the sea.

There were but two agents at the time Mr. Branch made these remarks. Mr. Evan Bowles, who had been appointed in 1821 to guard the Louisiana lands after the Cathcart-Hutton survey of that

[39] In a footnote to the pamphlet publication of his live oak letter to Southard of June 1, 1828—published, as already stated, in Philadelphia in the latter part of 1829—Brackenridge summarized the progress made up to the time last-mentioned by saying that about six miles of roads had been opened up as fire-breaks, from six to eight acres grubbed and enclosed for the commencing of a nursery from the acorn, and nearly 60,000 young trees pruned and cleared of surrounding growth.

region, was still drawing his $300 per year. Another agent, appointed by Mr. Branch himself in the September preceding his report, was keeping watch in Florida.

In addition to the two agents there were also, at the time of Mr. Branch's 1829 report, two live oak surveyors, or locators.

The first definite announcement of Mr. Branch's intention to terminate came on August 30, 1830, when he informed the Judge that the work must positively be brought to a close by the end of the year then current, that is to say, January 18, 1831.[40] But in his annual report submitted to Congress early in the December preceding that date, he took occasion to make the announcement of the wind-up a background for the ancient political rite of hanging the albatross.

In discussing the act of March 3, 1827, Mr. Branch said that efforts had been made to execute it so far as it related to the preservation of live oak growing on the public lands. "By the Section 4"[41] of that act, he went on to say,

> The President is authorized to provide for the preservation of this timber; but it seems to have been intended that the power should be limited to that object. An interpretation of the law has heretofore, been entertained, extending the power not only to the planting of the acorns and the cultivation of plantations of young trees, but to the purchase from individuals of lands producing them. The paper accompanying this, marked D, shows the amount which has been expended on these plantations, and the sums which have been paid to individuals for the purchase of tracts of such lands.
>
> When it is considered that this timber is the natural product of the coast of the United States from the St. Mary's to the Sabine; that the greater part of this belongs to the United States, and is proposed to be retained with a view to preserving a supply of this important material for the Navy, it can scarcely be necessary for the present to engage in its artificial propagation or culture.
>
> Under an impression that this system is neither expedient nor in conformity to the intentions of this act, an order has been given to discontinue the works after the expiration of the present year.

In short, Mr. Branch accused the preceding administration of having done that which was not merely unnecessary but unauthorized, and he hinted rather strongly that this action had been taken for the benefit of "individuals."

[40] American State Papers, Naval Affairs, III, 928.

[41] Mr. Branch erred. He meant the third.

Now inasmuch as one of the "individuals" referred to was a member of the body to which, through the President, Mr. Branch's observations were directed, it was a foregone conclusion that something or other would be started. So Colonel White moved Congress, ten days after the submission of Mr. Branch's report, to request of that gentleman copies of the reports of Judge Brackenridge and his overseer regarding the progress of work at Santa Rosa, as well as copies of the Judge's letters on cultivation; his avowed purpose being to controvert the Secretary's assertions about "expediency."

Promptly upon its making, up rose the Hon. Speight, of North Carolina, proposing an amendment, the gist of which was that the Colonel's request be enlarged sufficiently to bring to Congress information as to the amount of land bought in Florida, by what authority it had been bought, from whom it had been bought, why it had been bought, what it cost, what it was worth, etc.; together with copies of the agreements made between Mr. Southard and the Colonel and the Judge, and the deeds given covering the tracts purchased. Naturally such information would include copies of the Rodgers report and also of sundry revelations made by Thomas F. Cornell, "Late Agent for the Examination and Survey of West Florida Land," in a series of communications to the Secretary of the Navy, following his removal in 1829.[42] Naturally, too, the effect of the whole manœuver would be to bring out into the open a fight that had been raging more or less under cover ever since March 4, 1829.

If Mr. Adams ever allowed himself to enjoy anything it is likely that his dinner on the 20th of February, 1831, was a most noteworthy meal. It was Sunday, and on his way home from church he dropped in to see Colonel White. Presently Judge Brackenridge happened in, and they all had a nice visit together. But let the Diary tell the story.

Mr. White continues to be deeply concerned at the determination of the present Secretary of the Navy to break up the plantation of live oak which I had taken so much pains and incurred so much public expense to commence. The report of the Secretary of the Navy against it is remarkable at once for gross ignorance and wilful

[42] See American State Papers, Naval Affairs, III, 939, 944, 951.

misrepresentation; and he has been guilty of a dishonorable suppression of a report from the Commissioners of the Navy because it would have refuted and falsified his own.[43] Mr. White lent me for perusal a letter, dated the 22nd of January last, from himself to the Chairman of the Naval Committee of the House of Representatives denying the facts and refuting the argument in the report of the Secretary; and also two letters to him (White) from W. D. Aitken,[44] and one from Wm. Darby, all showing the importance of my plantation, and indeed its indispensable necessity to preserve the existence of live oak for timber. The malicious pleasure of destroying everything of which I had planted the germ, and the base purpose of representing as wasteful prodigality the most useful and most economical expenditures are the motives that act upon the Secretary of the Navy and the present administration.

It happened that for the live oak plantation purchases were made of about 1600 acres of land from White and Brackenridge; and although the timber upon them was worth more than they cost this circumstance was seized upon to represent the transaction as a fraudulent job and squandering of public money. Judge Brackenridge when this was suggested immediately petitioned Congress to be permitted to take back his land at the same price which he had received for it;[45] and that petition was rejected. The plantation both of young trees growing when I commenced it and of those from the acorn which I had caused to be planted is now in a condition as flourishing as possible and more than a hundred thousand live oaks are growing upon it. All is to be abandoned by the stolid ignorance and stupid malignity of John Branch and his filthy subaltern, Amos Kendall.[46]

[43] The report referred to may be found in American State Papers, Naval Affairs, IV, 109-11, but "refute and falsify" strikes this writer as being perhaps, a bit too strong.

[44] An error; the name was Acken. This was the man who had been appointed live oak agent to guard the public lands in East Florida by Mr. Southard in April, 1828, and had been removed by Mr. Branch in the following year.

[45] This is one of the weak spots about the vendor's side of the Santa Rosa transaction. If Brackenridge ever made such a petition to Congress, the writer has been unable to find any record of it. The only petition from the Judge recorded in the journals that remotely resembles such a petition as Mr. Adams mentions—and Colonel White with great emphasis in his letter of January 22, 1831—is one of December 5, 1828, and that petition was emphatically a horse of another color. Yet White could hardly have dared to make such a flat-footed assertion out of the whole cloth. The probabilities are that he (White) put the thing up to the members of the Naval Committee informally either as a thoroughly sincere offer or as a bluff that he knew wouldn't be called.

[46] Three days after this interview the Colonel wrote Mr. Adams asking him to state whether he (Adams) had planned the Santa Rosa experiment.

Congress reacted to Mr. Branch's communicatings and the Colonel's rousing rejoinder about a week after Mr. Adams had been given the privilege of perusing the latter; the report of the House Naval Affairs Committee with regard to the White-Speight motion of December 16, 1830, being made on February 26 following.[47] It seems that that report must have been drafted with the intent to let both sides down as easy as possible. The ugliest of the Branch charges, those intimating an illegal expenditure of public moneys, are ignored altogether. The plantation principle is given neither approbation nor reprobation in specific terms, but impliedly it is given a clean bill of health save as to Mr. Adams' pet idea about growth from the acorn. "Though there may be no necessity for growing the oaks from the acorns at this time," declared the committee, "examinations of the public and other lands . . . should be prosecuted with increased industry and adequate force." Extensive reservations were declared imperative, with accompanying measures for protection and "to encourage and facilitate the growth of the young live oaks"; which last, it will be recalled, had constituted the principal activity at Santa Rosa during the two years of its existence.

There was an avoidance, also, of anything in the nature of a direct decision of the question of the distribution of live oak, the committee adopting neither Mr. Branch's views as to the "natural product" nor the Colonel's demolition of the same. It played safe by advising "examinations." It took precisely the same stand with regard to the value of the Santa Rosa purchases. There was difference of opinion, it was declared, and the government had better take another look.

In only one respect did the committee feel constrained to take a decisive stand, and that was about a matter that was not in controversy. It declared that

---

The writer has been unable to locate Mr. Adam's reply, but that it was what the Colonel wanted, there can be no doubt, the Diary for February 29, stating that White had asked permission to publish it along with his (White's) letter of January 22. Mr. Adams gave the permission enthusiastically, remarking that too many people could not know his stand on the matter to suit him.

[47] The complete report, with letters and accompanying documents from Branch in response to the White-Speight motion, may be found in American State Papers, Naval Affairs, III, 917-58. Col. White's letter of January 22, 1831, is in Vol. IV, at pp. 112-17.

The penalties provided for the preservation of live oak and cedar timber, by the Act of March 1, 1817, appear to be sufficient as to all lands to which they extend; but doubts may be raised as to their application to the lands subsequently acquired by the United States, which would include the whole coast of Florida. To remove these doubts, the committee report a bill extending these penalties to injuries to the timber on any lands acquired or to be acquired for naval purposes.

The result of this recommendation was the passage of the act of March 2, 1831 (4 Stat. L., 472), entitled "An act to provide for the punishment of offenses committed in cutting, destroying, or removing live oak and other timber or trees reserved for naval purposes." In enacting this legislation Congress took, all unwittingly, it may safely be said, what was far and away the most outstanding and resultful action that was taken by government during the entire period of muddling through the impossible problem of broad-arrowing a nation before it was ready to be broad-arrowed.

This law is remarkable for two reasons. For one thing, it is all that remains of the reservational experiment.[48] The reservations themselves withered and died many years ago. But this law of 1831 still lives in full force and effect, and it is to-day the basic law upon the subject of public timber depredation in the United States. The other reason for the law's remarkability is the fact that it performs more than it promises. Its title refers to timber lands on naval reservations only, and that its enactors had such lands only in contemplation the last sentence of the quotation last made above would seem to demonstrate most convincingly. But in the formal enacting clause in the law proper a much more inclusive phraseology is employed. Not only is cutting, removing, and destroying forbidden on naval reservations, but on "any other lands of the United States, acquired, or hereafter to be acquired." And when the courts got around to the law's interpretation, some years subsequent to the year of its enactment, they had regard to what was in the bottle rather than to what was on the label—as we shall see by and by.

As to the kinds of timber to be protected the law was equally comprehensive in title and body. It applied, in specific terms, not

[48] That is, if one excludes Blackbeard's and Grover's Islands and the Santa Rosa plantation, all of which were not reservations of public land but direct purchases.

merely to live oak, or red cedar, but to all timber. Provision was made for the smart penalizing of individual violation, as well as for the forfeiture of vessels employed and the stiff fining of their masters. Penalties were to be sued for under direction of the Secretary of the Navy. Half of the fines collected were to go to the informers or captors, if any, the balance to the navy pension fund, the commissioners of which fund were clothed with discretionary mitigational authority.

In view of the determined tenor of this law and its comprehensive scope, to say nothing of the sweeping authorization by Congress of investigation and protection " with increased industry and adequate force," the Department lost no time in the institution of a system making possible " measures more coercive in their character." The law was passed on March 2. Before the month was out Commodore Rodgers was in extensive correspondence with the Commissioner of the General Land Office relative to coöperation between the latter gentleman's force of surveyors of the public lands and the force of agents that the Navy Department proposed to create. The whole coast from the St. Mary's on the southern boundary of Georgia [49] to the Sabine on the western border of Louisiana was to be districted, according to the Commodore, and an agent placed in each district.

But as the month in which these negotiations went forward was drawing to a close, the inter-cabinet difficulties of the first Jackson administration were rapidly drawing near to the bursting point. A few weeks more and that point had been attained, and much in the manner of a racing river steamboat of the day, the ministry of which Mr. Branch was a member blew up because it could no longer hold in the sentiments pent-up inside it. Amid a storm of bitter feeling, ribald and uncharitable exultation, and threats of horse-whippings, nose-pullings and duels the Peggy O'Neil cabinet passed into history. Mr. Branch received his euphemistic " intimation " on the 19th of April. At the President's request, however, he remained in charge of the portfolio until his successor appeared to take it over on the 23rd of the month following, in the person of the Hon. Levi Wood-

[49] The coasts of Georgia and South Carolina were not included because there was little, if any, public land left there and because practically all the usable live oak had been removed.

bury, of New Hampshire. During this interregnum he did not feel that it was incumbent upon him merely to preserve the *statu quo*. He exercised his prerogatives up to the end. In the period between the 19th of April and the arrival of Mr. Woodbury on the 23rd of May, he proceeded to perfect the organization of the district-agent scheme without a thought, apparently, as to whether it might or might not accord with the views of the gentleman whose seat he was temporarily keeping warm; and evidently oblivious of the fact that in doing so he was establishing, on a scale never before attempted, the very system concerning the merits of which he had been so skeptical only two years earlier. It is but just to point out, however, that he buttressed it up with the system he had advocated upon that same occasion. Which is to say, he provided his "marine force" by purchasing and outfitting three schooners [50] manning them with naval personnel, and assigning to each one a definite sector of the St. Mary's-Sabine coast line to watch from the seaward side. Both by land and by sea this new system had been completed, save for the appointment of one of the land agents,[51] and set in motion before Mr. Branch finally retired.

On July 27 the Judge gave tongue in a preliminary bay to Mr. Woodbury. To his predecessor, Mr. Woodbury was informed, the Judge had offered to continue the superintendency of Santa Rosa without salary in order that the results attained might not go to rack, but the predecessor would have none of him, having "taken up strong prejudices." This offer the Judge now renewed to Mr. Woodbury, assuring him that the expenditure of $300 for an overseer and a little more for a few hands would be money well spent from every standpoint. A few days later the Judge wrote a strong "follow-up" and got down to cases more definitely with regard to the predecessor aforementioned. He started out with a dissertation on the growth of the live oak, much in the manner of his famous letter of June 1, 1828, and then proceeded to a discussion of the methods theretofore employed by the government in the locating of stands of the timber on the public lands. These methods, he declared,

[50] The Spark, the Ariel, and the Sylph. The nomenclature was rather connotative of ephemerality, and, so far as achievement was concerned in the suppression of oak-stealing, very appropriately so.

[51] There were seven agents and seven districts in all.

had been largely futile because of the calibre of the persons employed. Instead of employing ship carpenters or navy laborers, whose experience would enable them to tell at a glance whether a tree was usable for ship construction when "cut to mould," recourse had been had, he declared, to "Mr. Charles Haire (a young Irish apothecary) and Mr. Cornell (a young New York attorney)" who had gone about the country armed with a piece of string with which they encircled the trucks and thus arrived at a rough computation of cubic content; a species of data which was of no value whatever, according to the Judge, when the formation of the tree measured precluded its utilization. And a force of carpenter-surveyors such as he advocated could be created and maintained, he argued, at a cost not much exceeding that of the agents "on the strange establishment organized by Mr. Branch shortly before his retiring from office."

And on the protective side the Judge was equally convinced of the futility of the "strange establishment." There was, he said, no need for protection. Little timber was being stolen; little had been stolen.[52] Therefore, he asked, "of what use are the cruising schooners when there is nothing to cruise against? Of what use are the live oak agents? What are those persons to do? Their services are ideal and the expense is not so." Sufficient protection could be secured, he declared, by requiring the collectors of the customs to refuse clearances to live-oak-laden vessels unable to account satisfactorily for their cargoes as to source and title. And then he told the Department how to solve its live-oak troubles. The method he advocated called for the establishment of two or three extensive plantations on the model of Santa Rosa, which, he reminded Mr. Woodbury, "I am now taking care of at my own private expense."

Whatever may have been in the far background of the action that brought forth the Judge's letter, the new Secretary of the Navy was put in mind of Santa Rosa from the slant of its proponents, and he was put in mind of the fact that his predecessor had shown something of a lack of delicacy and consideration by committing him to a policy and to the instruments for carrying it out. It is fairly certain that Mr. Woodbury felt that Mr. Branch had acted rather precipitately;

[52] An opinion to be compared with those of Mr. Southard, Mr. Branch, and, above all, Colonel White, that have been given heretofore. Also with some expressions of a rather contrary nature made by the Judge himself in his famous dissertation of June 1, 1828.

a feeling that was perfectly natural. The devising and inauguration of a live-oak system could have waited a few weeks without serious hurt being done.

But Mr. Woodbury was a very level-headed gentleman, and he allowed neither the Judge's eloquence nor any little irritation he may have felt to stampede him into ill-considered action. He recognized the logic inherent in the preservation from deterioration of that which has already been created at a price. He, therefore, fell in with the Judge's suggestions to the extent of authorizing him to go ahead as per his offer in his letter of July 27, with the understanding that his work was to be confined to "the preservation of what has already been done." And almost coincidentally he issued orders to one of the officers of the "strange establishment" to proceed to Santa Rosa, examine it critically, and report thereon.

In two more letters written before the convening of Congress in December, with Mr. Branch among those present,[53] the Colonel took occasion to water the seed of propaganda he had planted. The establishment was a "useless and extravagant expenditure of public money under pretense of protecting the live oak," he communicated on October 23. And on November 4 he declared that not only were the agents useless for protective purposes, but that the locating could be done much better by the regular surveyors of the public lands. He also made the same suggestion the Judge had made regarding the desirability of a law requiring proof of regular acquirement as a condition to live oak clearance. All in all, by the time Congress convened the new Secretary had been given considerable food for thought with regard to naval timber,[54] and it received reflection in his annual report which was communicated to that body shortly

[53] Mr. Branch was returned to the House following his surrender of the office of Secretary of the Navy.

[54] And this not merely, it is worth noting, from the Santa Rosa controversy source. Mention is made in the report of the return from the Brazilian station of the frigate "Hudson," which ship, although she had only been built in 1826, and had made but the one cruise, was literally falling apart with dry rot; that insidious disintegrant that the dockyards of Britain had vainly sought to combat for years. The fact that the "Hudson" was not built of live oak, and the further fact that several other ships of the American navy, many years older than the "Hudson," that were built of that wood, were still as sound as the days they were launched, together constituted, if not conclusive, certainly exceedingly strong, evidence of the outstanding superiority of our unique southern oak.

after it convened. In substance, Mr. Woodbury let it be known that the agent-schooner system was going to be discontinued, and a "less expensive and equally efficacious" plan substituted therefor. But he also made it plain that he had spent no more at Santa Rosa than was sufficient to preserve the results of earlier efforts; and that he did not contemplate going further. Polite to both sides, he made it plain that he was going to figure out his own course and hold to it.

This report of Mr. Woodbury bears the date December 3, 1831, which was exactly one day earlier than that borne by another report, written at and despatched from Santa Rosa, by General Clarke, of the "strange establishment," in compliance with the order of Mr. Woodbury heretofore referred to. It was, on the whole, a favorable report. A great part of the 1600 acres, said General Clarke—just as had Commodore Rodgers—was worthless from an agricultural standpoint; problematical from the standpoint of live-oak growing. But on about 400 acres the young trees seemed to be thriving. The General summed up by saying that the experiment had not been carried on long enough to prove or disprove its value. He advocated its continuance for a few years longer, when a better basis for the formation of a conclusion would be available.

Following the submission of this report, the House passed a resolution calling upon Mr. Woodbury to furnish additional information in documents regarding the Santa Rosa plantation, the administration of which led to a lively interchange of charges and countercharges between Mr. Branch and the Colonel. This resolution, as finally passed, called for an early report by Mr. Woodbury upon the general subject of live oak and live oak agents and for a later report, to be submitted at an early period of the next session of Congress containing Mr. Woodbury's views of the best means of preserving the live oak growing on the public lands; or, if he deemed it necessary, his views of the best plan or system calculated to secure an adequate supply of the wood either by cultivation or by purchase of lands containing it. The first of these reports, which was forthcoming on the 19th of the following March, was nothing but a compilation of documents bearing upon the Branch-White controversy.[55] The second did not appear until the 14th of the following Decem-

[55] 22 Cong. 1 sess., H. doc. 178, American State Papers, Naval Affairs, IV, 98-124.

ber. During the time intervening, the definite passing from the picture of the Judge is to be noted. His last term on the bench in West Florida had expired by January, 1832, and he did not receive a reappointment.

The passing from the scene of the Judge just about coincides with the passing of the project Mr. Adams had dreamed about in his summer-house nursery—governmental forest management toward a conservational end; in a word, forestry. The scheme was *in extremis* when Mr. Woodbury took office, and it had gasped its last for all practical purposes by the time he had retired.

It was not that Mr. Woodbury lacked the vision and imagination of Mr. Adams, or that he underrated the tremendous naval significance of that unrivalled [56] species of hard wood in which America was so fortunate as to possess a monopoly. Mr. Woodbury took the course he did because he comprehended, more clearly than did Mr. Adams, just what the great experiment that was America was all about. He knew that the heart of that experiment was individualism, at once its dangerous weakness and its giant strength; and that premature and ill-considered attempts at curbing such an elemental force contained grave possibilities of disaster.

Merely for the preservation of the timber,[57] therefore, Mr. Woodbury could see no reason for continuing the "strange establishment." So he recalled and sold the cruising schooners [58] and dismissed the agents as soon as he was satisfied that they had collected all the data that was possible, or which they were capable of collecting, and then announced that "the few live oak agents who remained in office last December, have been dispensed with; and no salary is now paying on that account, except, to one person, in temporary employ for a few months, in the examination of one unfinished district." [59]

[56] This is, taking into consideration the elements of accessibility and length of haul. Inherently the teak of India was about a standoff with live oak. But India, in the words of the chantey, was "ten thousand miles away."

[57] American State Papers, Naval Affairs, IV, 161.

[58] *Ibid.*, 159. It was only necessary to sell two of them. The Sylph foundered with all hands somewhere in the Gulf late in 1831 or early in 1832, her lost personnel constituting America's first casualties in her attempt at national forest control.

[59] This was in December, 1833. American State Papers, Naval Affairs, IV, 351, 352.

As to Santa Rosa he expressed himself at the same time as follows:

In immediate connection with the yards, hospitals, and other real estate, belonging to our naval establishment, is the live-oak plantation. Being situated only seven miles from our most southern yard, it has the past year been placed under the same general superintendence.[60] The purchase of the land and the cutting and removal of the underwood and common timber from about 200 acres of the plantation, had been accomplished before the charge of this department was placed in my hands. It seemed to me judicious, in that state of things, to attempt to preserve any benefits already attained, or fairly anticipated, by continuing to destroy, a few years longer, the annual growth of other wood injurious to the young live oak trees, to trim and train the thriftiest new ones appearing, and to employ merely the leisure of the hands so engaged, in extending this process to more of the land. From 200 acres of the land, and 22,000 live oak trees, to which, in 1829, the above system had been applied, it had, since 1831, been so continually extended, that the nursery has become enlarged to 225 acres, and includes over 60,000 trees.[61] The expense attending this has been about $1200 a year; but, should any considerable portion of the trees ever reach maturity, and attain a size suitable for ship-building, the government will be amply repaid. As the trees grow larger; the annual expense concerning the same number will rapidly diminsh. Doubts exist whether some of them, from the poverty of the soil, and their apparently dwarfish character,[62] will ever attain a valuable size. But it is now too early for forming a decisive opinion on the extent to which the operation

[60] The Judge having left Florida.

[61] A much more moderate estimate, it will be observed, than that which the Colonel gave Mr. Adams on February 20, 1831.

[62] A statement which impels one to wonder if there may not have been considerable confusion of thought among the live oak enthusiasts of the day; considerable of a tendency to take it for granted that every tree of the live oak kind was exactly like every other tree of the same kind, and therefore bound to grow in time into keelsons, stern posts, or heart hooks fit for the largest ships-of-the-line. As a matter of fact there are no less than five kinds of live oak growing in the southern coastal regions of the United States, and of the most important of the five (*Quercus virginiana Miller*) there are, according to Sudworth's Check List, four "shrubby" varieties, of one of which the following statement is made: "*Quercus virginiana dentata Chapman,* Dwarf Live Oak, occurring abundantly in Florida (pine barrens near the coast) was first distinguished under its present name in 1860, later being described as "*Quercus virginiana minima Sargent* and as *Quercus minima Small.*" The "young New York attorney," Cornell, said that Santa Rosa was a "worthless pine barren."

of these causes may affect the whole plantation; and, under existing circumstances, sound policy appears to require that the experiment, having gone so far, should be allowed a further and full trial. The nearness of the plantation to the Pensacola yard, and to water transportation, enhances much the value of any timber it may produce. Lately, I have not only placed this land under the general superintendence of the commander of the yard, but required his particular and constant vigilance over the live oak reservations in all that region of country.[63]

Some exceedingly vague references in post-Woodbury documents [64] might seem to indicate activity of a sort at Santa Rosa for some years after Mr. Woodbury's naval régime had ended.[65] But if so it was of a more or less puttering description. It got nowhere, was not seriously intended to get anywhere, and soon flickered out altogether. Santa Rosa died when the Judge left Florida, an embittered man, in 1832, and retired to Tarentum, Pennsylvania. A good half-century was to elapse before government was to engage seriously in the planting of trees—years after the topsails of the last "74" had faded into the horizon line of history.

[63] American State Papers, Naval Affairs, IV, 356.

[64] 24 Cong. 2 sess., S. doc. 1. 458; 25 Cong. 2 sess., S. doc. 1, 715; 26 Cong. 1 sess., S. doc. 1, 531; 26 Cong. 2 sess., S. doc. 1, 403; 29 Cong. 1 sess., H. doc. 2, 648.

[65] Mr. Woodbury was at the head of the Navy Department from May 23, 1831, to June 30, 1834.

CHAPTER IV

IRISH APOTHECARYISM

Of all that has been written about live oak and its utilization in the days when it was the material par excellence for the basic structures of men-of-war, the second special report of Secretary Woodbury, resulting from the final White-Branch set-to, is easily the most important and the most interesting. Indeed one is entirely safe in asserting that in all the forest literature of America, there is no work that, for coherent and logical treatment, close and accurate reasoning, and smooth assimilability withal, is superior to the communication made to the House of Representatives by Mr. Woodbury on December 15, 1832.[1] Mr. Woodbury got down to cases in arriving at his conclusions, like the able lawyer that he was; and the resulting document is one that flows convincingly from reasons to results and from relentless figures to their inevitably following facts, in a manner singularly unlike the scholar-and-gentleman bombast that was so prevalent at the time. Possibly because he kept away from the crags of rhetoric was why Mr. Woodbury could not bring himself to view with alarm.

Whatever the reason may have been, Mr. Woodbury took an exceedingly cheery view of the live oak situation. Figuring on what had been the navy's annual requirements in this timber since the beginning of the government, for small repairs, for rebuilding, and for storage at the yards for gradual improvement; on what those requirements for the same purposes were likely to be in the near and distant future; on the total amount purchased, and the total amount expended, lost, or destroyed since 1797; on the average prices per cubic foot paid during that period; and, finally, on the amount of

[1] Its complete title is "Historical Statement of the Use of Live Oak Timber for the Construction of Vessels of the Navy, and Vessels Built with it;—the Quantity on Lands Reserved from Sale by the United States and on Private Lands and the Necessity for its Preservation for Future Use." American State Papers, Naval Affairs, IV, 191-223.

usable size conservatively estimated to be remaining uncut in the regions to which it was indigenous: on these bases Mr. Woodbury made out a rather convincing case for optimism.

The way he figured it out on the very best data obtainable [2]—and he bent over backwards to be conservative—Mr. Woodbury saw an unquestionable assurance of a steady supply of all the live oak the navy would need for over a hundred years in the future. Losses from depredations on the public lands did not frighten him unduly for two main reasons. In the first place, he did not believe depredations for private construction would be great because shipwrights in private yards were strongly prejudiced against live oak on account of its extreme hardness and consequent difficult workability. As to other depredations—for foreign navies, etc.—he anticipated that existing laws already provided sufficiently discouraging penalties; and that the enactment of legislation such as had been suggested by Colonel White and Judge Brackenridge regarding clearances by the customs authorities, plus the requiring of all federal officers in the live oak region to assist in the preservation of the timber as a part of their regular duties, would effectually prevent leakages of this nature.

Let it not be imagined, however, that Mr. Woodbury was one of those flabby, dear-brother souls that smirk and smirk and soothingly exhort against alarmism. Mr. Woodbury was assuredly no alarmist. But neither was he a man hiding his head comfortably in the sands of "inexhaustibility" in order that a satisfactory present might not be troubled by thoughts of an unsatisfactory future. Well did Mr. Woodbury know, and straightforwardly did he say, that there were not going to exist in the South until the end of time upwards of seventeen million acres of live oak-producing public lands. There was going to be settlement, development, cultivation, extensive forestal removal, under which inexorable economic process the nation's potential live oak resources were going to shrink and keep on shrinking until the point was reached, far in an uncertain future, when it might be more profitable for the private owner to preserve

[2] The data covering past purchases, range of prices paid, etc., were assembled from the records of the Department. Those covering the amount of uncut timber in existence were compiled from the reports of the agents and surveyors, and from other sources of information, generous allowance being made for error, exaggeration, and possible future destruction or deterioration.

live oak than to grow corn and cotton. And such being the case he proposed leaving nothing to chance or guesswork. Instead, he figured out carefully and conservatively the live oak acreage requisite to furnish in perpetuity the annual live oak needs of the navy. This was ascertained to be 4640 acres.[3] Then, to make assurance forty times sure, he advocated reserving 160,000 acres for the purpose from those portions of the public lands ascertained to be most favorable for live oak.

These 160,000 acres were to constitute a perpetual insurance against the development of a live oak shortage at any time in the future. It was not contemplated by Mr. Woodbury that this anchor to windward would have to be put into use for a very long period of time, if ever; his theory being that as the country was cleared for cultivation in the process of settlement the live oak would be thrown on the market and purchased by the Government for storage at the navy yards. In this way a great accumulation of live oak cut to mould and ready for use at any time could be gradually built up, constantly growing in value as its seasoning proceeded.[4] Americans with live oak to sell, he believed, should be at least as willing to sell to their own government as to any other, provided that government were willing to pay the price. And whatever this price might come to be in the future, under the operation of economic law, the vital importance of the wood navally, Mr. Woodbury believed, justified its payment. The operation of that same inexorable law, he pointed out, would bring about in the long run, through the inducement of just such prices, private conservation and ultimately private propagation—private Santa Rosas, footing their own bills out of their own receipts.

Up to the time of his special report, Mr. Woodbury related, there had been set aside from the public lands as live oak reservations a

[3] The annual demands were 62,286 feet, which at the moderate rate of fifty feet per tree would require 1245 trees. Calculating twenty trees per acre the growth of sixty-two acres would be needed annually. Allowing seventy-five years for the growth of the trees to usable size, 4640 acres would be required for the requisite sustained yield.

[4] It was customary at the time to immerse the live oak as received in ponds of water for a year and then store it under sheds that protected it from rain, sun, and high winds but admitted a steady circulation of air about it. Handled in this way the live oak at the yards not only generally did not deteriorate but actually grew harder the longer it was kept. Commodore Rodgers said it was almost imperishable.

total of something over 67,000 acres,[5] leaving something under 100,000 acres to be set aside for the completion of his estimated reservational margin of safety.

On the whole, therefore, Mr. Woodbury could see little cause for alarm. He concluded his report in the following words:

> The low price and great abundance of our public lands, on which the live oak tree spontaneously thrives, will probably enable the government long to obtain from them a sufficiency to meet all our demands for it, without much attention to its artificial increase, and and in any event to cultivate it so far as at any future period may be found necessary, at an expense comparatively small.
>
> But on the facts and estimates herewith submitted, imperfect and inaccurate in many respects, yet as little so as practicable, I can see, in order to secure for our navy, while of its present size, an adequate supply of live oak timber, no occasion at this time either to make further purchases on private lands on which this tree grows, or to carry the artificial cultivation of it, on any of the public lands, beyond what has already been attempted.[6]

In passing from Mr. Woodbury's excellent survey it will not do to omit comment upon two points. The first of these deals with the matter of wood other than live oak for which the navy was more or less continuously in the market at the time. As Mr. Woodbury pointed out, the navy's needs in such woods as white oak, pine, larch, cedar, locust, and elm were very large; three times as large, in fact, as the needs in live oak, which was used only for the frames of ships; the frames constituting only about one-fourth part of the

[5] Exactly 67,417.36 acres, all of which had been reserved subsequent to 1825. The 19,000 acres reserved in Louisiana as a result of the Cathcart-Hutton survey in 1820 are not included in this total, they not having been re-examined by the agents at the time of Mr. Woodbury's report. The reader is requested to compare this total of 67,000 acres with the statement of Mr. Adams in his Diary on December 25, 1830, and to bear in mind that the total there given by Mr. Adams, 70,000, referred only to the area comprised in the Santa Rosa peninsula and the region lying between Pensacola Bay and Perdido Bay. The total given by Mr. Woodbury referred to all reservations everywhere in the live oak states except the 19,000 acres in Louisiana just mentioned. Bearing this in mind, and bearing in mind also that the Commissioner of the Land Office reported on October 23, 1830 (see American State Papers, Naval Affairs, III, 953), that only 925 acres had been reserved up to that time on Santa Rosa peninsula and the conclusion is inescapable that Mr. Adams either had a faulty memory, or was jollied a bit by his satellites, or both.

[6] American State Papers, Naval Affairs, IV, 203.

whole amount of wood used in their construction. These woods, however, were very much cheaper than live oak, costing, on the average, only about one-third as much per cubic foot, their abundance, and their wide distribution over the country, in distinction to the limited range of live oak, accounting for the marked difference; and accounting also for the fact that public and official consideration concerning them was practically non-existent. But the fact that they constituted so very large a part of the requirements constrained Mr. Woodbury to remark, in a paper called forth by an inquiry concerning live oak only, that the taking of thought respecting the assurance of a future supply of these woods, "whether in reserving public lands" on which they grew, or in purchasing supplies for deposit, was "a subject worthy of much attention." Probably at some earlier period in our national life some man had made a suggestion pointing in the direction of the establishment of national forests of a more general and less specialized nature than the reservations of live oak. Dr. Schoepf's remarks, for example, might be construed in that way. So might practically all of the legislation enacted since 1817 which we have noted hitherto. Almost all of it, while concerned principally with live oak, refers also to red cedar and "other timber suitable for naval purposes." But Mr. Woodbury's suggestion is the first of which the writer has any knowledge that considers the desirability of reservations of "other timber" for its own sake alone rather than as a mere sort of adjunct to live oak. It was an inconspicuous remark, merely made in passing in the discussion of another subject, but in it one can discern the vision of an exceptionally clear-thinking, far-seeing man to whom inexhaustibility was only a phrase. True enough, Mr. Woodbury was thinking of naval supplies only. Nevertheless, his thought is an outstanding illustration of the way national conservational appreciation develops—conservation, that is, for national economic ends; not as a means of livelihood or personal political aggrandizement. Mr. Woodbury saw facts and figures and trends and the inevitable developments out of the same; but he saw no dragons and called no men liars.

The other point to be considered is the hard practical point of prices, which undoubtedly had as much to do with Mr. Woodbury's serene summation of the live oak situation as all other things combined. Knowing that price ranges have a way of reflecting condi-

tions, he went into live oak prices rather extensively with somewhat agreeably surprising results. Despite the activities of those persons whom we always have with us, the sort willing to "profit by the occasion," as well as those of the despoilers of the public lands for the benefit of the English navy, to whom the Colonel and others referred, the prices of live oak had not shown an alarmingly upward trend. To a certain extent, indeed, the trend had been in the opposite direction. Frames for "74s" had cost $1.33[7] per cubic foot in 1799, $1.55 in 1816, and $1.37-$1.50 in 1827. Frigate frames had ranged from $1.42½ in 1816 to $1.20 and $1.25 in 1826, $1.25 and $1.45 in 1827, $1.30 in 1829, and $1.09 and $1.50 in 1832. Sloop frames had fetched $1.15 in 1816 and $1.15 and $1.25 in 1827. Promiscuous timber (*i. e.,* for repairs of various sorts) had cost $1.00 in 1816, $1.20 in 1826, 80 cents and $1.00 in 1827, 87½ cents in 1829, and 87½ cents and $1.00 in 1832.

By this time the reader will be asking himself who was right: the Colonel and the others who told of depredations by foreign agents and the "unprincipled of all nations," including the American; or Mr. Woodbury? Strange as it may seem, the answer is both. But that is a matter that will be touched upon later.

The one direct result of Mr. Woodbury's recommendations was the enactment of the last law aiming at the protection of naval timber that was written upon the statute books prior to the coming of the day of the ship of steel. The act for the gradual improvement of the navy passed on March 2, 1833 (4 Stat. L., 646), contained a section embodying the no-clearance-without-proof-of-lawful-acquisition idea, and enjoining all customs and land officers in the live oak states to institute prosecution seasonably against all unlawful takers of the public trees. On the face of things, government, as the warden of the nation's forests of live oak, might seem to have had the last word in impregnability added to its position by that statute. Government now could decree that certain forests were not to be molested. It could use the army and the navy to enforce that decree. It could make its servants sitting at the receipt of custom and measuring the metes and bounds of its domain *ex officio* treeherds. It could double-rivet the difficulty thus placed

[7] Some of the contractors at this price, however, could not fulfill their engagements, and it was reported that extra allowances were given to those who did. American State Papers, Naval Affairs, IV, 198.

in the way of the malefactor by making the gentleman with live oak in his possession prove that it was his. Such a line-up sounds depressingly airtight. But was it? Let us see.

It will be recalled that Mr. Woodbury did away with the agents for the protection of the live oak because he did not think they were necessary "merely for the protection of the timber." It is possible that this was the sole reason actuating him in the taking of the step, but it is highly improbable that it was. It is very difficult to conceive a man capable of the calmness, logic, and common sense with which the "Historical Statement" bristles being so utterly gullible. If Mr. Woodbury did not know that a mere corporal's guard of ex-Irish apothecaries and ex-New York lawyers could not by any chance be anything but ornamental under the circumstances he was singularly stupid. But wise men are not stupid; and Mr. Woodbury was wise.

Consider for a moment the aforesaid circumstances. Here was a region roughly of the size of France, filled with forest and morass, practically trackless, largely unexplored, and peopled, where peopled at all, with a breed that was almost to a man "Dismal Borderer" in philosophy and among which real, hard money was not a commodity so plentiful as to go a-begging. Its local officers were local in viewpoint, *ex necessitate;* while those placed over them from afar found it pleasanter, if not healthier, to look at things as the Romans looked. Exceptions? Certainly. There must always be exceptions.

As to the local-in-viewpoint phase let us consider the case of Mr. Dabney. Mr. Dabney was a Virginia gentleman who had gone to Florida in the late twenties, not to cultivate clients or the smiles of Demos, after the manner of the Colonel, but to cultivate the favor of Mother Earth. In a word Mr. Dabney was a farmer, though he would probably have described himself as a planter, and in looking about him after his arrival in the South for land whereon to ply his calling he considered the lands which the Government was offering for sale, after it had ascertained, through its local servants, that they were not worth reserving for naval purposes. Ultimately, at a government sale held in Tallahassee in February, 1830, Mr. Dabney and some friends of his invested in a fairly large tract of these lands. In doing so they had some opposition. They had to outbid a couple of gentlemen who were exceedingly anxious to become legally seized of the same property. These

gentlemen, however, lacked either the gameness or the resources of Mr. Dabney and his friends, and, the game becoming too hectic for them, they concluded not to "stay." The pot, therefore, fell to the Dabneyites, and it proved to be a rich one. Mr. Dabney's personal share of it was some 730 acres, and on every acre there were some four or five magnificent live oaks ranging from eighteen inches to six feet in diameter; trees, as Mr. Dabney put it, "with stems of immense length and a great variety of curves."

Mr. Dabney and his friends, naturally desiring to realize on their prize, began to look about for a market for the highly valuable elements of sea power that had thus fallen into their hands at—even allowing for the bidding-up—a very great bargain. Being patriotic Americans they decided to give their own government the first chance at it; and Mr. Dabney was deputed to address Washington to that end. So he got into communication with the Hon. Mr. Branch and told him about the timber they had to sell, making it plain to him at the same time that unless the United States availed itself of the chance the oak would go elsewhere. He and his friends, said Mr. Dabney, were anxious to get their land cleared. "Such a parcel of ship timber," he wrote, "ought not to be lost to the Government. I am poor and hope to realize some capital from it which will enable me to cultivate more land."

The writer has not gone to the trouble to ascertain whether Mr. Dabney's oak ended up at Gosport, Virginia, Gosport, England, or Brest, France; and we need not bother about that detail here. It is highly important, however, that we should note some exceedingly interesting revelations which Mr. Dabney, in the course of his letter to the Secretary, imparted with admirable bluntness.

According to Mr. Dabney the unsuccessful bidders at the sale were acting for two government employees, one of whom was a deputy-surveyor, the other a clerk in the local land office. Working together these two gentlemen were doing a thriving business. At government sales they bought heavily—per representatives—of lands concerning which they had inside information by reason of the deputy-surveyor having been over them on his surveying trips.

Another angle of the interesting occupation of these faithful servants was the selling of such information to prospective purchasers regarding the lands to be put up for sale. In the furtherance

of their varied activities they were also in the habit, Mr. Dabney declared, of causing the field notes regarding lands about to be sold to disappear from the files of the land office, so that purchasers would either have to buy in the dark or patronize the information service above described. Mr. Dabney made no bones about saying that if the deputy-surveyor had done his duty the lands Mr. Dabney and his friends had purchased would never have been put on the market, but would have been reserved for the navy by reason of the live oak they contained. But they were put on the market, and for a purpose. The only thing that prevented that purpose from materializing was the horning-in of Dabney *et al.* Just how it came about that those interlopers were guilty of so unwarranted a degree of officiousness whether it was the possession by them of information more inside than that furnished by the official bureau, or a lucky determination to "play a hunch," is not quite clear. Between the lines of Mr. Dabney's letter one seems to read the latter explanation. In any event, so the affair transpired, and one of the results thereof was the chronicling for posterity of the local forest viewpoint in Florida in the thirties that shows us that there and then the local distaste for, and the determined disregard of, the Broad Arrow was as well defined as it had been along the Pascataquacke one hundred years before.

Bearing such a situation in mind let the reader ask himself if ten men of heroic mold could have kept unauthorized axes off the live oak forests in the first half of the last century. And having digested that reflection let him remember further that there were never so many as ten agents at one time, and that the mold of those there were, was—well, not quite heroic. Heroes as a general rule don't seek watchmen's jobs, however glorified, as a reward for their political complexions. But, it may be urged, they may have been a restraining influence. With timid and unresourceful folk, yes. But pioneers are not timid and unresourceful. They can't be.

All this being the case, would it not be the most natural thing in the world to conclude that after the courageous survey of Secretary Woodbury had snipped off this utterly useless agentiform appendix it would not grow again. It might be natural but it would be very erroneous. Mr. Woodbury tried hard but he could not exterminate the agent system. Within a year or two after his relinquishment of the naval portfolio the job of live oak agent was once more a

political resource. Indeed, the balance of the story of our national attempt to safeguard our resources in naval timber is largely a story of the guardian agents who made up various sequels to Mr. Branch's "strange establishment."

Let us begin this story in the year 1838, four years after Mr. Woodbury had finished his trick at the navy's wheel. That was a notable year because it was the first year in more than a decade in which the delegate from Florida was not named Joseph M. White.[8] C. Downing was now the incumbent, and he believed in live oak agents—provided they were of his sort. He wrote a sort of dissertation upon the species on June 26 to Secretary Mahlon Dickerson, Mr. Woodbury's successor. There had been a time, he said, when the Seminole Indians had been the best live oak protection in Florida, no one daring, prior to their reverses in the Seminole War, to venture far into the woods to cut the timber. But "now," he went on, "in some of the best portions of the live oak country that danger is removed, and I understand encroachments and trespasses are already begun to a great extent."

Mr. Downing continued his remarks a couple of weeks later, but addressed them this time to President Martin Van Buren. After drawing another alarming picture of depredational activity he agreed with the Colonel and the Judge that the agents of bygone years had been an indifferent lot. Said he:

> They were strangers, and did not know a live oak tree when they saw it. One was an ex-Governor of Georgia—and ex-Governors will not penetrate our hammocks to seek out trespassers.[9] We want hardy woodsmen, sons of the country with local knowledge.

After which high plane of civic virtue the anti-climax, seizing Mr. Van Buren by an epistolary button hole, he confided that he had an ideal live oak agent in the person of a constituent of his, and that the said constituent's appointment would place him (Downing) "under a personal obligation."

[8] The Colonel did not stand for re-election in 1837, but made a European tour instead. Returning to Florida in the following year he showed a flash of his old vigor for a time in some acrimonious political correspondence. But a year later he died in St. Louis. His old adherent, Judge Brackenridge, long survived him, living in Pittsburgh till 1871. By one of the turns of fate their old enemy, John Branch, became one of the territorial governors of Florida, by presidential appointment, some time in the late thirties or early forties, and resided, during his incumbency, at a place called Live Oak.

[9] The ex-governor was the Judge's friend, General Clarke.

And so it went. The remainder of the story of the guardian agents covers several decades in time, some hundreds of thousands of acres in area, but precious little in accomplishment. Between 1834 and 1876 we learn from time to time of their existence, but little in a definite way of their actual performances. There were four or five of them in the period between 1837 and 1844,[10] three in 1845,[11] and five in 1857;[12] probably about the same number at other times. The responsibility for the care of the reservations, carrying with it supervision of such protecting forces as might exist, was delegated to the Board of Navy Commissioners in 1834.[13] The Bureau of Yards and Docks fell heir to it in 1845[14] and held it till 1872, when the Bureau of Construction and Repair assumed it and held it to the end.[14] There were, until 1871, no specific appropriations for their maintenance, the expense being met either from funds for the "gradual improvement" of the navy, or those for its "increase and repairs."[15]

Consideration of a governmental effort of such feebleness suggests that anything stronger may not have been needed; that perhaps the live oak was not being disturbed save in the estimation of alarmists, and that the small force of agents was maintained merely by way of giving an appearance of smartness to the naval forests.

But we know—for the testimony on the point is super-abundant and trustworthy—that the looting of the public live oak, both on and off the naval reservations was never lessened to any appreciable extent by any measures taken by the national government during practically the entire period of wooden war ship construction; that is to say, from the beginning of our national existence to the era ushered in by the combat between the "Virginia" and the "Monitor." During substantially the whole of this approximate half-century the open stealing of live oak from the government reservations would seem to have been not merely a business but an extensive and lucrative business, engaged in by persons of standing, utilizing a large amount of capital, and affording employment to great numbers.

[10] 27 Cong. 2 sess., S. doc. 215; 28 Cong. 1 sess., H. doc. 268.
[11] U. S. Nautical Magazine, 1, 127, 197.
[12] 35 Cong. 1 sess., H. ex. doc. 2.
[13] 23 Cong. 2 sess., S. doc. 1.
[14] Secretary of the Navy, Annual Report, 1872, p. 72.
[15] 28 Cong. 1 sess., H. doc. 268, p. 5.

Live oak was shipped longshore and overseas with no let or hindrance to speak about. Much of it went to the naval depots of foreign powers, just as, in years gone by, many a New Hampshire mast tree had gone to build up the naval strength of a nation that had dreamed of one day acquiring, by that same naval strength, complete domination not only over the forests where the mast trees grew but, willy nilly, over the woodsmen who stole them, Broad Arrow or no Broad Arrow.[16] There is respectable evidence that live oak contracts for the navy were matters of no inconsiderable interest to persons in public life; persons who were academically interested perhaps, merely in the historical development of the American law of contract.

Only perhaps there may have been other reasons. The New Jersey political gentleman who in the forties got one of these contracts by order of the President of the United States may or may not have been interested in the law of contract. But it is conceivable that when he hied to Gadsby's Tavern with the ink scarcely dry on the document and sold it there for a good round sum he was interested also in the development in America of the minting art. And when his friend and henchman in the Navy Department, in discussing this operation in negotiable instruments some time later, jovially informed an auditor that "there were more ways of making money in Washinton than were dreamed of in his philosophy," it is barely possible that his mind may have been dwelling upon more material things than legal developments.[17]

Without "let or hindrance," however, is a not entirely accurate statement. During the late thirties and early forties, as we have

[16] "When the immense demand for these materials, not only for our own domestic supply, but the world over, is considered, the temptation to take what is neglected and unguarded will be in proportion to the consumption and the profit which may be derived from it. These depredations have been carried on to an immense extent for twenty years, to my certain knowledge." . . . "The business men of Florida who desire to possess these lands from the very fact of the immense value of the timber upon them will not volunteer any information to the Government, or be very ready to communicate it if asked for. It is a profitable business to sell the Government its own timber." . . . "The clear profits of a cargo of live oak cannot be less than about $1500 for a voyage of two to four weeks." Extracts from S. doc. 97, 27 Cong. 3 sess., pp. 4, 8.

[17] For an account of this incident see especially H. rep. 195, 28 Cong. 2 sess. See also "Letters of Northampton," p. 9 (Washington, 1846) and S. ex. doc. 21, 35 Cong. 2 sess.

already learned from Mr. Downing, there seems to have been in Florida some hindrance of a very effectual sort. Osceola and his Seminoles for a time made the live oak forests in that region rather unpopular.[18] They inaugurated an "irritation of woodsmen" that for forthright rigor compared rather favorably with that original New Hampshire brand which had helped to put a clause in the Declaration of Independence.[19] But their activities seem to have been restricted to but a small portion of the live oak territory. Elsewhere there was need of them in 1841, in which year the Secretary waxed very pessimistic upon the whole subject of live oak, which he declared was being stolen daily, despite the agents, for whom, he declared, "lawless bands" of thieves had the most supreme contempt.[20]

In view of the indifference, not to say the complacency, with which anything in the nature of helping one's self to whatever one could get on the public domain was regarded by the average man at this period, it is rather surprising that congressional notice of a distinctly view-with-alarm tenor should have come to be taken of the matter. That any attention at all should have been paid to it at the seat of government is sufficient evidence of the scandal it had become. The Senate, on January 5, 1843, passed a resolution that constitutes, so far as the writer is aware, the first legislative inquiry in our history aimed exclusively at timber depredations on public lands. The resolution called for

> the evidence . . . that depredations of a most ruinous kind are being daily committed on the navy timber . . . and that our own people are daily selling to our Government live-oak timber which they take from the public lands; and also . . . proof . . . that any foreign government has, by contracts with any of our citizens, obtained supplies of live oak cut from the public land. . . .[21]

Secretary Upshur's response to this resolution contained nothing that was not already sufficiently notorious with the informed. It was simply a reiteration of that which every secretary had said from the

[18] 27 Cong. 3 sess., S. doc. 97, pp. 2 and 3.

[19] "He has erected a multitude of new offices, and sent hither swarms of officers to harass our people, and eat out their substance." A complaint unquestionably directed in part at the Surveyors-General of the Woods and their deputies.

[20] 27 Cong. 2 sess., S. doc. 1.

[21] Cong. Globe, 12, 119.

beginning, of what Branch had said in 1829, when he declared that the great value of live oak made it "an object of pillage to the unprincipled of all nations." It was a reiteration, however, with a style all its own; a style derived partly from the inherent vigor of the documents of which it was composed, partly from the exceptional knowledge of what they were talking about possessed by the writers of those documents, finally from the amazing parallel which is smashingly drawn—a parallel both of the past and of the present.

As to this latter feature, consider the following:

> You will thus perceive how easy it is to abstract timber on the banks; and the practical disadvantage the Government labors under, which, at no great distance of time, will be seriously felt, is that the most *accessible* timber will be carried off, and the Government forced into the interior to get their lumber. For, it is to be remembered, that the expense of ship-building materials, depends, in a great measure, upon the distance they are to be hauled.[22]

The foregoing extract refers to Florida in the 1840s, not to New Hampshire of the 1740s, or to America as a whole of to-day. If American forest history teaches nothing else, it teaches that in forest affairs there is, after all, not very much under the sun that is new. The reader is cautioned to bear these two ideas of accessibility and length of haul well in mind. He will come into contact with them later, much later, and more than once.

The entire document, in brief, portrays very graphically how the old game of flouting the Broad Arrow was played in Florida in the forties; how the sorely "irritated woodsmen" of those parts found ways and means to set at naught the efforts of the "swarms of officers" who had been sent there to "harass" them and "eat out their substance." Apparently the circumventing of these damnable instruments of tyranny was not an operation of hopeless difficulty. If taking without leave or license was for the time being out of the question, recourse could always be had to the pre-emption act of September 4, 1841 (5 Stat. L., 453), or to the "armed occupation" act of August 4, 1842 (5 Stat. L., 502),[23] by which it was

[22] 27 Cong. 3 sess., S. doc. 97, p. 4.

[23] Made more liberal by the act of June 15, 1844 (5 Stat. L., 671). Both acts applied to Florida only.

almost always possible to get plausible possession of a choice bit of live oak long enough to make way with it.[24]

Of absorbing interest are the letters of Agent Thistle, who was apparently an instrument of tyranny fully as irritating as his name might indicate; apparently, also, possessed of old-fashioned ideas of honesty[25] and of bowels to back them up; braving pikes at his throat and lurid imprecations to seize stolen saw logs; characterizing the live oak "business" of the day as "crooked as Captain Cook's voyage around the world"; ordering $50,000 suits against the big contractors; recording quaintly that one of them "thought it hard" to be prevented from cutting public timber as he always had done.[26] It is to be doubted if Thistle ever ran a drug store; more likely he skippered a whaler.

The cream of this document, however, is contained in a letter which lacks the Thistleonian piquancy but more than makes up for it in its shrewd insight into the gist of the whole public timber question, both as it existed then and as it was to exist in the years to come. This letter, from a captain of the topographical engineers who had observed, while on professional tours of duty in the Gulf States, what he terms "the reckless depredations on the live oak forests, the property of the United States," is well worth quoting at length. Said Captain Hughes:

* * * *

The cutting of live oak from the public domain has been, for many years, an illicit occupation; but recently it has assumed a legal form, under the action of the pre-emption law, and the evil has been greatly extended. Persons squat on the *cheniers,* as the live oak groves are called, and cut off the timber as fast as possible, paying no regard even to its economic removal, but destroying it in the most wasteful manner; and as soon as the oaks, which constituted the only value of the land, have disappeared, they renounce their "rights," squat somewhere else, availing themselves of the conditions of the law, and repeat the same plundering operation, to the manifest injury of the United States, and to the serious annoyance of the *bona fide* settlers, whose interests are intimately connected with those of the Government. So far has this business been carried on, that the hunting up of *cheniers,* and covering them with

[24] See, for detailing of the *modus operandi* of this highly profitable occupation together with the names and home addresses of the principal "operators" of the period, letter of Wm. C. Dwight, of Louisiana, at pp. 7-9 of S. doc. 97, 27 Cong. 3 sess.

[25] What, by the bye, were old-fashioned ideas of honesty in 1840?

[26] 27 Cong. 3 sess., S. doc. 97, pp. 10-14, 18, 19.

pre-emption claims, has become a profitable occupation, dignified with the title of "a profession"; and I have even heard the names of Government contractors mentioned, who have *procured* squatters on the public lands for the sole purpose of obtaining possession of the timber.

The correction of this monstrous evil, which threatens the most serious consequences to our navy, can be found only in some modification of the pre-emption law, by which the live oaks may be exempted from its operations; or else, by requiring the land to be paid for before the occupants, under that law, are permitted to remove the timber. Perhaps it would be the true policy of the Government, in making contracts for timber, to authorize the contractors to cut down the trees belonging to the United States, under certain conditions of reduced price, and such restraints as may tend to the preservation of the forests from unnecessary injury. For the Government is now, and has been for years, paying enormous prices for its own timber; and I fear it will be difficult to prevent the above, unless some plan similar to the foregoing be adopted.[27]

Besides asking the Secretary for evidence of timber spoliation the resolution of 1843 requested suggestions as to "additional grants of power and means" which might in his opinion tend to its more complete suppression. In response to this Mr. Upshur did not advance anything of a very definite nature. He made a sort of general advocacy of a system of moving in condemnation proceedings against property of all sorts used by depredators rather than against the depredators themselves, remarking rather significantly that he had little hope that existing law or any that might be enacted to combat timber thievery would be enforced by jury trials. Mr. Upshur evidently knew his borderer.

What Mr. Upshur did, in truth, was to put the whole matter up to Congress in a very diplomatic and gentlemanly way. Without his saying it or even directly hinting it, it is not difficult to read into his remarks a wish that the navy might be relieved of responsibility for the whole business. He intimated that a special and specific appropriation would be most welcome. His distinguished successor, Mr. Bancroft, was less reticent, bluntly stating in his report for 1845, that the Land Office could handle the matter with greater efficiency and less expense than could the navy.[28]

[27] Written May 18, 1842, to the Secretary of the Navy.

[28] 29 Cong. 1 sess., H. doc. 2, p. 648. The delegation of responsibility for the reservations in this year to the Bureau of Yards and Docks was probably due to the Secretary's distaste for the subject.

After Mr. Bancroft's remarks all references to both agents and reservations disappear from the annual reports until 1851, a silence that was undoubtedly due to some extent to the fact that both navy and nation were engrossed with affairs in Mexico. For this half-decade, it is to be presumed, the woodsmen enjoyed a respite from "irritation."

During the decade of the fifties the story of the reservations is almost exclusively a gospel according to Joseph Smith, who was Chief of the Bureau of Yards and Docks during that entire period,[29] and who to judge from his reports, was either an administrator of extraordinarily sanguine temperament or one who was amazingly well served by his force of live oak agents. Mr. Smith's reports during this period might almost be said to be stereotyped. Always were the agents energetic and active, always were they seizing great quantities of stolen live oak, red cedar, and long-leaf yellow pine, of which latter wood mention begins to be made about this time as being extensively stolen and shipped abroad for mast and spar making. So sanguine was he in 1853 as to express the belief that all timber stealing would shortly be entirely suppressed.[30] And it is gratifying to believe," he wrote in the following year,

that the live-oak, red cedar, and long-leaf yellow pine timber for masts and spars, which were formerly shipped in large quantities to foreign countries, thereby contributing to the building up of foreign navies, are now chiefly appropriated to our own marine purposes.[31]

And yet despite this tone of dauntless optimism that characterizes Captain Smith's reports in general there crops out from time to time a hint of an insect in the liniment. In the same breath with his "all's well" he occasionally hints at a plenty of thievery,[32] and

[29] Captain, afterwards Rear-Admiral, Joseph Smith, was chief of this bureau from 1846 to 1869. It is somewhat of a coincidence that his son, Captain Joseph B. Smith, should have been killed in action in that epochal running-amuck of the iron-clad "Virginia" among the wooden vessels of the Federal fleet in Hampton Roads, March 8, 1862. His ship, the "Congress," furnished a most melancholy demonstration of the impotence of wood when opposed to iron or steel in naval combat. That day the passing of live oak as a naval material of the first importance began.

[30] Secretary of the Navy, Annual Report, 1853, p. 448.

[31] *Ibid.*, 1854, p. 458.

[32] *Ibid.*, 1855, p. 93.

remarks on the difficulty of getting convictions because of the sympathy of the local population for the depredators, against whom they would bring in verdicts of "one cent" as trial jurymen.[33] In speaking of this very practical difficulty, which, he said, enabled many a rascal to escape, he stated that

> the woodsmen of pioneer life, in too many instances, do not regard their obligations to public law when private interests can profit by its transgression.[34]

At the same place he complains of the existence, among the native populations, of persons in the pay of foreign governments for the purpose of stealing and shipping choice oak for their naval depots.[35] He also describes two of the methods used by depredators of the day; methods that are of interest because of the frequency with which they are encountered in later forest history and in other parts of the country.[36] One was the practice of putting a mill on private land close by tracts of public timber and then extensively forgetting where mine ended and thine began. If one were left undisturbed in this operation for a sufficient length of time, a very small piece of private timber could be made to yield an amazing stumpage. The other method consisted of the girdling of government timber and its subsequent procurement under the head of "dead timber" or "lightwood" when the process had produced its inevitable result. It was the custom of the Department at the time to allow *bona fide* settlers to use dead trees for legitimate domestic purposes—firewood, fencing, etc.

When he was describing the adjacent mill method it is altogether likely that Captain Smith had in mind an Alabama episode that came to a head in the late 1840s or the early 1850s.

The creating element in this episode was one Goree, an Alabama gentleman of substance and standing, whose line was timber, and whose enterprise in the furthering of that line was almost, if not quite, as forthright as that exhibited by certain Yankee gentlemen

[33] 36 Cong. 1 sess., S. doc. 2, p. 1137.

[34] See also H. ex. doc. 2, 35 Cong. 2 sess., p. 3.

[35] They were also probably common enough in New Hampshire. The present instance, however, is the earliest reference to them the writer has noted.

[36] 35 Cong. 2 sess., H. ex. doc. 2, p. 473.

in the furthering of the same line at various points in New Hampshire and Maine at a period just about one hundred years earlier. In the course of his goings-about Mr. Goree became aware of a very fine piece of timber that was doing no good to anybody. Having become somewhat absent-mindedly automatic in his reactions by this time, and being a very busy man with no time for details, Mr. Goree very naturally remarked the big outstanding thing that was lacking in the situation—to-wit, a mill alongside fulfilling its destiny. Probably he said something about it to his secretary. At any rate a mill materialized and was busy materializing when a most unheard of thing occurred. One of Captain Smith's agents appeared on the scene and, in a most unreasonable manner, halted, as the saying is, the whole works. The timber being cut, he declared, belonged to the navy, and the cutters were guilty of trespass. He haled Mr. Goree before the Federal Court at Montgomery, and Mr. Goree was duly tried, found guilty, and fined. Whereupon a great outcry arose in the State of Alabama, and the life of the Secretary of the Navy became less pleasant than it had been.

There was a Member of Congress at that time, named Samuel W. Inge, a very determined sort of gentleman who was given to carrying his differences of opinion with other gentlemen, when ordinary controversial procedure became of no avail, to the smart duelling grounds of the day out at Bladensburg. Mr. Inge represented an Alabama district, and Mr. Goree was his friend and constituent. It was inevitable, therefore, that Mr. Inge should appear before the Secretary in due course. It was equally inevitable that he should make to that gentleman representations that were not lacking in vigor.

Mr. Inge did more. He laid before the Secretary a monster petition from the people of Alabama, to which some very eminent names were appended. The name of the Hon. H. W. Collier, Governor of Alabama, was there; so was that of the Hon. J. J. Ormond. Both of these gentlemen, incidentally, contributed privately to the Secretary's fund of information with regard to the case of Mr. Goree. The Governor said Mr. Goree was one of the finest citizens of the State of Alabama, and that the depredation Mr. Goree had committed, if depredation it were, was a thing that had been " common practice in Alabama for thirty years." Mr. Ormond

was more conservative, contenting himself with saying that if it was the regular policy of government to remit fines in such cases as that of Mr. Goree, the case of Mr. Goree presented a most deserving opportunity for the exercise of such executive benignity.

Both of which arguments were, of course, very compelling. But they were far outdone by the argument woven into the body of the petition itself. That argument set forth most strikingly the enormity of punishing Mr. Goree for what he had done by making an analysis of the alleged offense, in which the matter of accessibility was employed in a most ingenious, not to say masterly, fashion.

There had existed, the argument set forth, a piece of timber that was so remote as to situation as to be inaccessible for all practical purposes. Being inaccessible, it was worthless. By reason of the enterprise, ingenuity, and indomitable determination of Mr. Goree a mill was placed in juxtaposition to it, with the result that its worthlessness vanished and a most attractive value appeared in place thereof.

That was about as far as the argument went, but of course it was as far as was necessary, inasmuch as it fairly surcharged the atmosphere with a couple of overpowering inferences: one, that Mr. Goree, far from being a malefactor, was a benefactor, a creator of values: the other, that Mr. Goree owed no money to the United States, but that the United States owed money to Mr. Goree.

Now this argument, with accompanying papers, was passed on to Captain Smith by a Secretary of the Navy much harried by the Hon. Sam Inge and others, and it called forth from Captain Smith on June 22, 1850, a letter, into which the Captain put his heart. We need go into that letter very little. Suffice it to say the Captain declined to accept the theory that Mr. Goree's mill bestowed value upon the timber. Instead, he was somewhat vehemently of the opinion that it was just the other way around. And as to what the Governor had to say about "common practice in Alabama for thirty years," the Captain desired to know, in effect, what of it? And he asked if the fact that live oak stealing had been going on for thirty years, and much more than thirty years, did not constitute an excellent reason for making an example of an arch-offender when the government had such a perfect opportunity for so doing as was presented by the case of Mr. Goree.

To get back to 1857, some fifty thousand acres of additional lands were selected by the agents and set aside in that same year. Smaller reservations were made in 1855, 1856, and 1858, the report for the last year stating that in making selections lands that were obviously agricultural in character were omitted from the reservations wherever possible. The great epidemic of reserving in 1857 was due to a bureau order to the agents calling for increased activity in this respect, Captain Smith making no bones of a determination that in the liberal grants being made by Congress at the time to states and corporations in aid of public improvements, etc., the navy was not going to be frozen out of the game.[37]

Captain Smith also rather contradicts his optimistic tone by more or less constantly urging stronger measures by the government, stating in his 1859 report that the plenary act of 1822 did not contemplate half-way action. He also consistently reiterates the recommendation of Secretary Upshur, that a separate appropriation be made for the protecting service, and the fund for "increase and repairs" thus relieved of what he terms an "onerous charge."[38] It is not unreasonable to imagine that Congress, in failing to heed this recommendation, may not have been uninfluenced by the Captain's contradictory optimism. Why help a gloriously going concern?

The writer has not attempted to ascertain the precise year in which the reservations experiment was at high tide in point of gross acreage. It was undoubtedly pretty close to the time of Captain Smith's 1857 "drive," as, although a recession in the movement had already set in, and most of the reservations in Louisiana and

[37] *Ibid.*, p. 665. Florida acquired twenty million acres under the swamp land act of September 28, 1850 (9 Stat. L., 520). See also Annual Report of the Secretary of the Navy, 1856, pp. 408-09, where Secretary Dobbin said: "I have recently directed that search be thoroughly made in our forests on that coast (*i. e.*, the Pacific) with a view to ascertain its ability to supply ship timber." This statement, which might well seem to have been called forth by the same considerations which evoked Captain Smith's order, is remarkable as being the only reference to naval timber reservation made in the regular naval reports from Bancroft's time to the close of the Civil War, by anyone other than the Chief of the Bureau of Yards and Docks. The report submitted as a result of that West Coast naval timber cruise makes interesting reading. Had the scheme been pushed through with the vim Captain Smith had it pushed in Florida, it might have been the means of preserving in public ownership some of the timber principalities later acquired by private corporations.

[38] The cost of the agents, etc., he stated in 1857 to be about $12,000; in 1860 about $10,000.

Alabama had been restored to their original public domain status by the acts, respectively, of March 3, 1843 (5 Stat. L., 611), and March 3, 1853 (10 Stat. L., 259), the entire acreage set aside in those two states from first to last was considerably short of 50,000 acres.[39] The restorations were made when tract after tract in the states mentioned had been ascertained to have been cut clean of all good timber, which had been, to employ a naval phrase of a later day, "sunk without a trace."

The reservations as a whole disappeared from view about as completely with the breaking-out of the Rebellion, all reference to them ceasing until 1866. Their emergence from war-induced eclipse in that year came in the shape of a brief historical sketch of the entire experiment by Secretary Welles in a distinctly unenthusiastic strain. In 1868 he wrote a similarly couched sequel. Concerning the agent system he was nothing if not ironical. His references to the agents "alleged expenses" for "their supposed services" must have been balm to the bruised soul of Brackenridge with his bitter memories of Irish apothecaries.

Secretary Welles characterized the whole reservation policy "a costly failure" and recommended its abandonment. Every stick of

[39] A fact that would seem to substantiate somewhat the Colonel's stand in his controversy with Mr. Branch about live oak distribution. Secretary Gideon Welles, in 1868, gave, in H. ex. doc. 161, 40 Cong. 2 sess., the following figures for the entire history of the reservations adventure, showing that there had been reserved, from first to last:

In Florida	197,739.74 acres
In Alabama	220.66 acres
In Mississippi	25,849.30 acres
In Louisiana	27,840.67 acres
On Santa Rosa Island (est.)	12,800.00 acres
Or a total of	264,449.77 acres

This does not include the 1950 acres in Blackbeard's and Grover's Islands purchased in 1799 and 1800, or the 1600 *arpents* purchased at Santa Rosa in 1828. Why the report should differentiate between Florida reservations in general and Santa Rosa reservations (which were of course in Florida) is a little hard to understand. The reference to Santa Rosa Island is an error. That island is a barren stretch of sand. Santa Rosa Sound was unquestionably meant; to be exact the penisula between that Sound and Pensacola Bay. The Secretary's uncertainty as to the precise Santa Rosa acreage is possibly explained by a statement in the report to the effect that in the confusion created in the Department by many officers throwing in their lots with the South at the outbreak of the Civil War many maps and documents disappeared.

live oak, he asserted, that the government had used for the navy had been purchased, very frequently after having been cut from the reservations themselves. He renewed Bancroft's recommendation that the Land Office should resume control of the reserved areas. But in case of the non-adoption of this recommendation he expressed the opinion Upshur had expressed in 1843—that a specific appropriation for some sort of protective system should be made.[40]

An officer of the navy was detailed in 1869 to go over the reservations and report upon their condition;[41] and as a result of his findings the Chief of the Bureau of Yards and Docks urged in the following year that $9000 be appropriated for their protection.[42] This time the Upshur idea went across, there appearing in the naval appropriation act for 1872 the following item: "For protection of Timberlands, $5000" (Act of March 3, 1871; 16 Stat. L., 527).

This was a very noteworthy appropriation, as it was the first one made directly for the protection from spoliation of publicly-owned timber in the United States. Primarily it was intended for the protection of the naval reservations, and it was principally, if not exclusively, expended for that purpose. Its wording, however, was broad enough to permit a more comprehensive guardianship; and the agents appointed under it were expected as they went about their duties on the reservations proper,[43] to have an eye for the protection of the adjoining unreserved public lands. Their prime duties, however, were with the reservations, and no general scheme of timber protection throughout the country at large was contemplated under this first act making provision directly for the protec-

[40] Secretary of the Navy, Annual Report 1866, pp. 36, 37; 1868, pp. xxvi, xxvii. See also H. ex. doc. 161, 40 Cong. 2 sess.

[41] Secretary of the Navy, Annual Report 1869, p. 20; 1870, p. 77.

[42] The writer has not read this report, but an excellent hint as to the conditions it disclosed is given in a letter written in 1870 to the Commissioner of the General Land Office by the Surveyor General of Florida, wherein it is stated that the mills about Pensacola were helping themselves to government timber "by no other right than the right of discovery."

[43] A thing which the naval timber agents had probably been expected to do even before this appropriation was made after the Supreme Court interpreted the 1831 act as applying to all timber lands in 1850. But about the time the appropriation was made there seems to be some doubt that even the reservations were patrolled.

tion of publicly-owned timber."[44] But the act does not deserve the distinction, sometimes accorded it, of being the first appropriation for the general protection of all publicly-owned timber. That distinction belongs to an act passed two years later, which we shall consider in another place.

The same comment applies to appropriations, similar in amount, made under the naval bills in each one of the four years following.[45] The wording of the first three of them is like that in the 1871 act. The last one reads, "For Salaries of Subagents and Watchmen, and Miscellaneous Expenditures Incurred in the Protection of Timber Lands."

The naval reports for these years contain almost no inkling as to the success or otherwise of the re-inaugurated system, although the recommendation by Secretary Robeson, in 1875, that steps be taken "to prevent the exportation of such of this timber as is left on our southern coast,[46] is rather ominously significant. Responsibility for the care of the reservations was transferred to the Bureau of Construction and Repair, July 1, 1873. The appropriation for 1876 was the last direct governmental effort to be made in connection with the experiment. No further appropriations were made, though urged on the ground of renewed depredations.[47]

There was no reason why there should be. Altogether apart from the thoroughly demonstrated ineptitude of the whole agent scheme—a demonstration so overwhelming as to make one wonder why the system was re-adopted in 1871—the now fully-dawned day of iron and steel made naval timber reservations an anachronism. This was

[44] See "Statement of appropriations and expenditures of the Navy Department from March 4, 1789, to June 30, 1876," p. 68; S. ex. doc. 3, 45 Cong. 1 sess., Secretary of the Navy, Annual Report, 1872, pp. 71, 72; General Land Office, Annual Report, 1877, p. 20.

[45] Acts of May 23, 1872 (17 Stat. L., 151); March 3, 1873 (17 Stat. L., 553); June 6, 1874 (18 Stat. L., 57); and January 18, 1875 (18 Stat. L., 300).

[46] Secretary of the Navy, Annual Report, 1874, p. 19.

[47] *Ibid.*, 1877, p. 276. See also Cong. Record for May 22, 1876, p. 3259, 44 Cong. 1 sess., where certain of the then live oak agents are quoted to the effect that their places were well understood to be nothing but political sinecures, that they did nothing but draw their pay, and were even ignorant as to the location of the reservations they were supposed to guard. Their "profession" in general is described as being recruited "from all grades and classes: one is a barber, another a preacher, others are farmers, a number are gentlemen of leisure, while all are politicians." See also S. ex. doc. 9 (part 2), 45 Cong. 2 sess., pp. 48-51.

so far recognized by 1879 as to cause the restoration of the greater part of the reservations in Florida—in which state the vast bulk of the reserved areas was situated—to the public domain[48] (Act of March 3, 1879; 20 Stat. L., 470). Late in 1894 or early in 1895 the balance of the Florida lands were restored under the same law.[49] Secretary Herbert urged the restoration of all the tracts in 1893,[50] and Congress took action on his suggestion with the act of March 2, 1895 (28 Stat. L., 814), authorizing the certification over, by the Navy Department to the Interior Department, of the remaining tracts in Alabama and Mississippi; an action which was accordingly taken two weeks later.[51]

Nominally some 3000 acres in Louisiana retained the reservation status until 1923. As a matter of fact they long ago ceased to be true reservations, entries and settlement having been erroneously allowed on them by local land officers in the thirties and forties of the last century. The entries were later suspended, but the occupation continued, creating an anomalous situation, which it remained for the recent act of February 16, 1923 (42 Stat. L., 1258), to correct. The certification over for restoration to the public domain—subject to confirmation of title to the original entrymen or their successors—which this act authorized was formally consummated on March 30, 1923, and the last rood of America's first national forests became a memory in fact as well as in name.

The last statement refers to the areas that were set aside from the public lands. The small acreage that was purchased at Santa Rosa, and in Blackbeard's and Grover's Islands, constitutes a case apart. Being government-owned land instead of public land it could not be disposed of in a like manner with the reservations set aside from the public domain. It has accordingly remained in the possession of the Government, and a good portion of it is likely to remain in that possession for some time to come. Under an act passed June 7, 1926 (44 Stat. L., 700), making provision for the disposition of sundry lots of real estate no longer needed by the navy, Blackbeard's Island was transferred to the Department of Agriculture to be used permanently as a wild life refuge under the jurisdiction

[48] Secretary of the Navy, Annual Report, 1879, p. 310.
[49] *Ibid.*, 1894, pp. 43, 44.
[50] *Ibid.*, 1893, p. 53.
[51] *Ibid.*, 1895, p. li.

of the Biological Survey. Grover's Island was sold to a private purchaser, December 23, 1927. Under the law just cited, if no other governmental department puts in a request for any of the property to be disposed of within ninety days, it is appraised, and offered to the state within whose borders it lies,[52] at the appraised valuation, until the expiration of a stated period; when it may be sold to a private purchaser at not less than the appraised valuation. Neither the State of Georgia, nor any department of the government put in a request for Grover's. It is interesting to note that the appraised valuation of the island was $4140, not much more than half the sum the government paid for it something over a century and a quarter ago.[53] The sale price was $6,667.50.

But the tracts purchased from the Colonel and the Judge at Santa Rosa—to which, by the way, the 1926 law does not apply—promise to turn out a much better investment. A conservative appraisal by a Pensacola real estate firm, made at the request of the commandant of the air station there in 1926, placed a value of $250 per acre upon the land. But the navy at this time shows no disposition to collect its unearned increment. It proposes to hold on to Santa Rosa as a valuable adjunct to the air station at Pensacola.

So far as attaining its ostensible objects was concerned the whole reservational attempt was a failure on rather a colossal scale—as it was foredoomed to be. Government might, and did, decree that section this or section that could not be homesteaded because set aside as a naval reservation;[54] but government did not prevent the

[52] With the limitation that it must be used for public purposes, and that it shall revert to the government when it ceases to be so used.

[53] It is to be borne in mind, however, that the live oak standing on the island at the time of its purchase was cut off and used by the navy, and that the bulk of the purchase price ($7500) went to cover the timber rather than the land.

[54] Altogether, apart from the futility of reserving, considering the time and the circumstances, the laws passed for the enabling of that object, in 1817 and 1827, were weak in their most vital feature. This was pointed out by the Commissioner of the General Land Office in 1853 (See annual report for that year) when he drew attention to the fact that under both laws the existence of suitable timber on land had to be established before it could be reserved. The possibilities for fraud under such an arrangement are manifest, and they are well illustrated by the Dabney case. As the Commissioner stated at the time mentioned, the reserving power should have been a blanket power covering all possible live oak lands.

timber thereon from being made away with because government could not. And government could not because America was America—the land where forests were inexhaustible and where the Broad Arrow in any form was the symbol of official harassment, of "irritation," of the "eating out of substance."

Why was the reservational attempt ever made in the live oak country? It was an attempt at the impossible, and there was no man of sense alive at the time but must have known it. Yet the attempt was made—only to result, as we have seen, in "a costly failure." The barbers and preachers and ex-governors and ex-druggists and ex-lawyers continued to draw their salaries to no purpose through the forties and fifties and sixties and even for a decade after Worden in his "yankee cheesebox on a raft" sounded the requiem of "wooden walls." Even the live oak navy of Mr. Branch that the calm Mr. Woodbury abolished came back [85] and made intermittent cruisings—likewise to no purpose. Shrewd eyes noted its comings and goings and the courses it laid. Doubtless, too, Jack ashore, with a rum-quickened tongue, told all that he knew. And with the resulting data local wireless, in neighborly fashion, did the rest. Even if this local lack of sympathy had not existed the task would have been stupendous. The southern coast, as has already been pointed out, was literally labyrinthine. Genuinely to suppress oak running with a "marine force" in such a region would have called for well nigh the combined navies of the world.

As to our navy proper at the time—the whole of it made up but a tiny force, and but a fraction of that could be kept in the southern coastal region. And pirates, slavers, and Yellow Jack kept that fraction rather strenuously employed.

The army, too, was tiny, and the bulk of it was likewise necessarily otherwhere than in Florida. It was needed in the vast Indian country beyond the Mississippi.

A civil protective force along agent lines, to have been genuinely effective, would have had to have been very large and very exceptional as to quality of personnel. Political and economic considerations, to mention no others—and there were many others—made

[85] After the Seminole war two small steamers were transferred from the army and used for a time in live oak work. From time to time other small craft were occasionally employed, but never in sufficient numbers to render the work effective. See S. rep. 97, 27 Cong. 3 sess.; S. doc. 1, 28 Cong. 2 sess.

quantity impossible; quality likewise, save in the case of an occasional Thistle.

Indeed, it is hardly correct to speak of our live oak efforts as an attempt. It would be far more accurate to describe it as a going through the motions of an attempt; and rather awkward motions at that, constituting in their sum total nothing but a species of ludicrous Dogberryism, for which "lawless bands of thieves" could not fail to have "the most supreme contempt."

Now Mr. Woodbury, when he scrapped the live oak navy and did away with the agents because he did not consider them necessary "merely for the protection of the timber," labored under no misconceptions as to the true state of affairs on the live oak coast. He knew all about the stealing that was going on and that had been going on. He knew, too, though he could not very well say so, that it was going to continue to go on without serious reprehension by government for years to come. It is altogether likely, too, that he harbored no illusions as to the length of time that the useless gestures he had suppressed in the agent system and the marine force would stay suppressed. Knowing his America as he did, and the political processes that constituted perhaps its most characteristic form of self-expression, he must have known that an excuse for a job is bound to produce that job if you will only give it time. We have already seen how short a time elapsed after he had abolished the job of live oak agent before Mr. Downing got confidential with Mr. Van Buren.

It was all very well for Captain Smith to talk big and bold in his reports, but he was whistling in a graveyard and he knew it. The reports were American political window-dressing. Back in the shop in those days everything was not so lovely by a "long sea mile." If you doubt it, go to the navy's archives and delve into his letters.

Delve, for example, around the year 1857, in which year his agents were met in Florida with "armed force" by certain gentlemen who objected to their "substance being eaten out." True, they apologized later on, pleaded that they were "poor,"[56] and generously offered to compromise.

Now armed resistance to government is rebellion, and government squelches rebellion relentlessly—when it is wise to do so.

[56] "The usual excuse of guilt," said Captain Smith of the incident, "and totally unworthy of merit."

In this case Captain Smith did not, apparently, consider it wise, for he accepted the offer of compromise and then, in a manner of speaking, saved his face by declaring

> The Department is reluctant to resort to prosecutions even for wilful trepasses; but the majesty of the laws must be vindicated at whatever cost or risk, and it reserves to itself for further decision the question of suits against these parties.

Perhaps it is just as well to reserve the shadow of a right when you know that it will not do for you to exercise the substance. Government knew that it could not because it had tried. Not on the live oak coast particularly. There, the effect, apart from a little flare of Thistleism, had never been overstrenuous. But the reader, in order to grasp the situation confronting Captain Smith in 1857, is to bear in mind that only three years before a genuinely rigorous use of power against borderism had been made, and, for the time being, got away with. A thousand miles away from Alabama the navy had been used to stamp out tree stealing, and it had stamped it out—for a little while. But there had been a psychological and political repercussion of a rather violent nature and government had taken thought. That repressive incident and its sequel constitute another story, that will be told in due course in another place. It will be enough at this point to say that the lesson then learned was very fresh in the minds of Captain Smith's superiors. Government had noted that that which is immediately desirable in steering the course of a people across the sea of its destiny is not always advisable.

The Florida outbreak was not Captain Smith's only timber worry in the year 1857. He had troubles a-plenty in the State of Alabama. The timber agencies in that state had been abolished in 1855. Why, the writer does not know. Perhaps they interfered too much with Mr. Goree. Perhaps it was a result of the just-mentioned repercussion. But abolished they were, and within a short time the Captain began to receive reports of the extensive operations in that quarter of agents of the French and English navies. They were, it was said, looting the forests and shipping the avails of their activities overseas. The reports became so numerous by 1857 that the Captain felt constrained to look into it. He accordingly directed inquiries as to the gravity of the situation to four prominent citizens

of the state and asked their counsel as to the advisability of re-establishing the agencies.

On one point the replies he got were agreed: the plundering and shipping out were unquestionably going on. But on the question of setting an agent to catch a thief there was difference of opinion. The Collector of the Port of Mobile and the ex-Congressman advised it, though not with extraordinary enthusiasm. But the United States Senator and the Federal District Attorney were strongly, not to say violently, opposed. The Senator held that timber agents were unnecessary, useless, and "annoying to the community." He did not specify any cases of annoyance, though it is scarcely to be doubted that he recalled the matter of Goree.

The District Attorney went much further. In fact, he about went the limit when he declared that spoliation of the public lands was the real policy of government. He said that the United States judges were substantially declaring this policy by consistently instructing juries to acquit in all timber trespass cases brought before them. Having gone so far he pulled his horns in a little by "explaining." The trouble was, he said, that the timber agents never got evidence sufficient to convict. The result had been a great number of cases brought, only to end in farcical defeats for the government; which finally impelled the courts to adopt the instructed acquittal attitude.

Now there were some nine million acres of timber in the public lands in Alabama at that time, most of it pine that had a very great naval value for masts and spars. But only an infinitesimal portion of it—less than 300 acres—was ever formally reserved for the navy. It had been given considerable protection, nevertheless, by an extraordinarily good agent of the Thistle type, a gentleman named Claiborne, who had been in charge when something, the writer knows not what, had caused his Alabama agency to be discontinued in 1855. It is certain that Captain Smith desired very strongly to reappoint Claiborne to a revived Alabama agency in 1857, but he received, as has just been pointed out, very little local encouragement to that end. Much as he unquestionably wanted to he did not quite dare to do what the Senator called "annoying the community." So he wrote a regretful letter to Claiborne at Mobile, in July, 1857, and told him that he had decided to defer his decision

in the matter till after Congress met so that he might consult members as to the "expediency and necessity" for the desired move. Evidently his consultation afforded him little encouragement. The agency was not revived. But the Captain did the best he could. He reappointed Claiborne in the autumn—as agent for Louisiana and Mississippi.

This Alabama experience of Captain Smith may at hasty first sight appear inexplicable, if not damnable, to those who view the past in the light of the present. But it was not. It was very simple and very natural. Years later a wise American forester explained it all when he said

> This continent was conquered and civilized, not under the direction of a despot or by a carefully planned system but through individual initiative, by the push and energy of a free people. The people led and government followed.

America of the forties and the fifties was not the America of to-day. Great development it had doubtless known, but it was still preponderantly a country of the pioneer and the Borderer, with a vast untouched back country fervently believed to be limitless, "inexhaustible." Those circumstances made for a popular thought not entirely propitious to a demonstration of a governmental arm both long and strong; a popular thought that had toned down considerably since Broad Arrow days, and was constantly trending in the direction of more and still more toning down, but that still, nevertheless, saw pretty much eye to eye with the Dismal Borderers. Writs did not run smoothly in Florida for the same reason they had not run smoothy in New Hampshire—because America was America. They were not to run smoothly in the woods of America anywhere for many a year. The "experience and necessity" of Dr. Schoepf still lay in the future.

So much for the live oak experiment's general aspects. As to its special features with regard to our instant theme, one thing stands out—its effect upon popular forest thought. Now for a second time had the Broad Arrow been discredited in popular estimation. Now more than ever did the Borderer regard the protection of public timber as but a governmental bluff. Unenforced pronouncement had bred—as it can never fail to breed—contempt for authority. With America all set and squared away for the westward

surge that was to follow the Civil War, and the terrific forest exploitation of the seventies, eighties, and nineties that exemplified it so graphically, the common man still believed at least as strongly as ever that the forest was inexhaustible, and more strongly than ever before that the Broad Arrow didn't mean what it said.

The states in which this first forestal experiment of ours was made comprise but a small fraction of the nation; the naval forests created in them but a tithe of the nation's forests. Only the fact that it was upon this tithe alone that practically the whole forest activity of government was concentrated during the first half-century and more of our national existence justifies the detailed emphasis that has been laid upon it. There were forests elsewhere in America, many millions of acres of them, but it was pre-eminently in the live oak forests that we were blindly groping during this period toward some system that might ensure "a bit of wood over which to hang the tea kettle." The results of that groping, the lessons learned from it, the ideas fostered by it, were not to affect in after years the forests of their origin alone, but the forests of America as a whole. It is with that one great American forest that we shall deal from here on.

96203

CHAPTER V

THE ERA OF MAGNIFICENT PLUNDERING

"Even after two centuries of struggle," wrote Henry Adams of the progress of development in America in 1800, "the land was still untamed; forest covered every portion except here and there a strip of cultivated soil. . . . Nature was rather man's master than his servant."

When one considers in connection with the foregoing the further fact that there were at the time mentioned but slightly more than five million people in what is now the United States, including negro slaves but excluding Indians; and that those people thought in industrial and transportational terms that to us seem the extreme of picayune, a clearer understanding is gained of the existing popular ideas regarding forest inexhaustibility and the sacredness of property in timber. It will likewise be apparent that all the rude forest slashing of the Borderers during the two centuries had had little if any effect upon the forest as a whole. In terms of cubic content there was probably about as much forest in 1800 as there had been on the day the trees were felled for the first cabins at Plymouth. There was too much forest and there were too few Borderers for it to be otherwise. Accretion from natural growth took care of the depletion due to the activities of man, who was hard put to it to consume the interest, let alone digging into the principal.[1]

Roughly speaking, this situation continued until the middle of the nineteenth century though in a constantly diminishing degree, due to the increase in population and the ever mounting rate of

[1] This statement must be understood in a general sense, *i. e.*, in connection with the forests of America considered as a whole. Great inroads were made locally. Thus, Schoepf deplores "the lack of a systematic forest economy," in connection with the mines and iron works of Pennsylvania and New Jersey in 1783-84, which by recklessly using up the adjacent and economically accessible timber made it difficult and often impossible to continue to operate at a profit.—Travels in the Confederation, I, 36-38, 131; II, 5.

utilization; to say nothing of the increase of and improvement in transportational facilities such as railroads and canals. Thus, the opening of the Erie Canal about 1825 meant that vast areas of lake timber theretofore locked up by inaccessibility could now be floated to tide water. With the increase in development, too, existing natural waterways came into use. The timber of New York and Pennsylvania began to flow down the Susquehanna and the Alleghany and rafts began to appear on the Ohio and the upper Mississippi. The railroad worked a vast change in timber accessibility and in the areas of lumber distribution.[2]

All this was but one phase of that transportation-founded economic transition that took place in America in those first fifty years of the nineteenth century, a transition making slowly but inexorably for the large and ever larger scale in all things, for a hitherto undreamed of development of the corporate idea, and for the hastening of the dawn of the day of "Big Business." Those with vision clearly saw that the precarious days of which Adams speaks were about over. The mastery was passing to man. At the mid-century mark the country stood at the threshold of a new era. The day of the pioneer was verging toward its late afternoon. It was still to have a glamourous gloaming and afterglow that was to constitute one of the most colorful episodes of history. But that was to be a splendor of passing, marking the end of those heroic individual days when every family, indeed every man, was self sufficient; when man lived by the rifle and axe instead of by the can opener and the mail-order catalogue. Well on its way was the day of the great railroad system, the department store, the huge manufacturing plant—in a word, the day of mass production and wholesale, country-wide distribution. It is needless to dilate upon the changed status of raw materials, including wood, under such a state of affairs.

[2] Regular and continuing utilization of the West Coast forests began at this time also. The first mill on Puget Sound was set up some time between 1845 and 1852. Still earlier, however, Dr. John McLoughlin, had done a little lumbering as a sort of side line to the regular activities of the Hudson's Bay Co.—in British Columbia as early as 1827; on the Columbia a decade later. The resulting lumber was shipped to Hawaii and California.—Lawler, Historical sketch of Canada's timber trade; Memorial of the American Society for Encouraging the Settlement of the Oregon Country, 21 Cong. 2 sess., S. Journal, p. 71; 22 Cong. 1 sess., H. Journal, p. 44; also 27 Cong. 3 sess., S. doc. 102.

Apparent rather than real was the check given to this onward march of bigness by the Civil War. The real effect of that then gigantic marshalling of men and materials was in the nature of a fillip to the already existing drift toward the big. It was a preparation of the national mind for what was to come by means of a graphic demonstration of grand scale activities. The surge toward hugeness after the war was all the more violent because of that sanguinary lesson.

To a national mind still holding to seventeenth century ideas of inexhaustibility, still imbued with Dismal Borderer ideals regarding national timber, still filled with the sense of enthusiastic limitlessness of the pioneer, the oncoming of this era of industrial gargantuanism was not a thing to cause forebodings. Rather was it a thing to be welcomed with brass brands, illuminations, and free gifts of terminal and factory sites. Big! What of it? Was not America the land of bigness, of limitlessness, of inexhaustibility? The bigger the better. The idea of bigness was the very heart of the nation's genius. The existence of Frankenstein possibilities in the coming order was simply not recognized.

And so it was that the early seventies saw well developed another curiously contradictory state of popular thought with respect to American forests—a well nigh unanimous enthusiasm for huge scale development coupled with a naive, hiding-ostrich disregard of the fact that such development was bound to mean an ever increasingly tremendous consumption of timber; with, as an inevitable consequence thereof, a corresponding increase in the commercial desirability of the private acquisition of timber lands on the grand scale. Gargantua must needs be fed and those who set up for his purveyors could not afford to be caught short of supplies. Not only must they have constantly at hand the wherewithal for huge production; they must look ahead and be able to know that a continuing supply would be ready to hand as needed. And not the purveyors alone looked thus to the future. There were not lacking those shrewd souls, sometimes called men of vision, who saw the possibilities in the years ahead of purveying to the purveyors. As in Secretary McHenry's day there were " persons ready to profit by the occasion," a quotation not repeated at this point in a necessarily invidious sense but merely to draw attention to the fact that that motive power which drives the race ahead, some-

times called selfishness, sometimes ambition, was functioning then as it always will function so long as humankind is neither stagnant nor sovietized.

The industrial transition which has been sketched above is well cross-sectioned by the following approximately accurate figures on its lumber phase:

Year	Number of mills	Average output per mill
1840	32,000	$400
1870	27,000	9,500

In other words an industry run on the country grist-mill plan evolved in the direction of the general " big " development—fewer and larger producing units with greatly increased individual outputs.

Now it is no part of the purpose of this chapter to detail all of the ways by which in the course of a half century the American forests—by which is meant forest standing on unalienated land—were looted of untold millions of feet of lumber to the not inconsiderable enrichment of sundry private individuals or of how within the same period forests of literally imperial vastness passed out of public into private ownership, until the area publicly owned was but a quarter of that in private hands. What is aimed at is simply the sketching in bold relief of the havoc brought by the overthrust of an idea—the running over, with the momentum of two and a half centuries, of the thought of the pioneer, into a time when the day of the pioneer had definitely terminated. Somewhere it has been said that there is nothing so explosive as an idea. Be that as it may, the history of America has abundantly demonstrated that there are few things so persistent.

Those who demand concrete details can read them in the publications of the Agricultural and Interior Departments for the decades from 1850 to 1910—oases of human interest set in dreary deserts of dry-as-dust humdrum. Bald, unembellished, and direct, these simple records of the results of an anachronistic thought are infinitely more engaging to any one possessing the slightest conception of the meaning of history than the whole deluge of sensational near-literature based upon them which inundated the country in the heyday of the muckraker.

Thus, one may read in the report of Secretary of the Interior, Carl Schurz, for 1877 that

> It appears from authentic information that in many instances the depredations have been carried on in the way of organized and systematic enterprise, not only to furnish timber, lumber, and firewood for the home market, but, on a large scale, for commercial exportation to foreign countries.[3]

Or, nearly a decade later, that

> Vast quantities of timber continued to be stolen from lands belonging to the United States; and there is reason to believe that persons not devoid of respectability are in collusion with the thieves. Large sections of railroads are now being furnished with ties and bridge timber, taken, it is said, from the public lands without warrant of law or right, and without any compensation.[4]

Concretely, he may read the details of how a gang of Genoese adventurers, during a long period of years after the definite abandonment of the reservation idea, robbed the Florida oak lands of what timber the earlier thieves had left; operating on the grand scale by setting up mills on the rivers, and sending out the finished product by the ship load without any pretense of concealment.[5] Or of how an equally enterprising group of Canadians looted the forests of the Rainy River district according to a similarly ambitious plan.[6] The story once told the writer by an old Michigan lumberman of the period we are considering—to the effect that it was quite the thing in those days to buy forty acres and then lumber everything joining it to the far horizon[7]—is equalled and eclipsed many times on the musty pages of the official government reports for the decades which have been called the "Golden Age of Lumbering."

In the same publications there is set forth the record of the obtaining by interested private individuals, intralegally, but at a tithe of their value, of immense areas of valuable timber lands,

[3] Department of Interior, Annual Report, 1877, p. 16.
[4] Department of Agriculture, Annual Report, 1885, p. 204.
[5] General Land Office, Annual Report, 1888, p. 54.
[6] Secretary of Interior, Annual Report, 1890, p. xvi.
[7] Such tracts were known as "rubber forties"—because of their extreme flexibility. It will be recalled that the same trick was worked in Florida.

sometimes by direct sales,[8] sometimes indirectly by the purchase of the various forms of government scrip and warrants.[9] There is a record of one company having obtained over three million acres of timber lands by the purchase of agricultural college scrip.[10]

Likewise there is set forth the story of the long misuse of those laws originally designed to aid the settler and homemaker, to assist the individual in the hard task of wilderness breaking. Witness the words of Commissioner Williamson regarding the pre-emption law of September 4, 1841 (5 Stat. L., 453),[11] and the homestead law of May 20, 1862 (12 Stat. L., 392):

> Under the provisions of the pre-emption and homestead laws it (*i. e.*, the government) is granting a license to destroy millions of acres of pine forest of almost incalculable value, which should be preserved as a nation's heritage.[12]

Or,

> Millions of acres have been taken under these laws which contemplate settlement and cultivation whereon now no vestige of agriculture or cultivation exists. These laws are used in the pine land portion of the country mainly as covers for fraud.[13]

Not without its elements of the grimly humorous is the record of the timber-inspired manipulation of two other laws originally enacted to facilitate wilderness breaking—the timber culture act of March 3, 1873 (17 Stat. L., 605), and the desert land act of March 3, 1877 (19 Stat. L., 377).

The title of the first of these acts is sufficient evidence of its lack of connection with anything related to original forestation. Yet of its actual working, we read that it was

> Violated by strained constructions to favor timber culture entries on land not subject to such entries. The statute restricts these

[8] General Land Office, Annual Reports, 1874 and 1875; Hough, Report on forestry, I, 12 *et seq*, U. S. Bureau of Corporations, The lumber industry, I, 182, 221, 256-58.

[9] Military warrants were made assignable by act of March 22, 1852 (10 Stat. L., 3).

[10] U. S. Bureau of Corporations, The lumber industry, I, pp. 252, 253.

[11] The pre-emption right was recognized still earlier in the relief granted certain settlers on the Symmes Purchase in Ohio by the act of March 2, 1789 (1 Stat. L., 728).

[12] General Land Office, Annual Report, 1876, p. 9.

[13] *Ibid.*, 1877, p. 25.

entries exclusively to prairie lands or other lands "devoid of timber." When the time arrives for making final proof the entryman is required by law to show 6750 living and thrifty trees growing on the land as the *result* of his planting and cultivation. I found that a ruling had been prescribed that if there were not more than 6750 natural trees growing on a tract at *date of entry* the land could be entered under the timber culture law.[14]

And in connection with the second law, designed to promote the reclamation of a type of land which one cannot associate with the forest without painfully stretching the imagination, there occurs the following significant comment:

There is still another class of depredators who under shadow of title strip the timber from a certain section of country or tract of land by making what they claim to be a desert land entry. They make the first payment as required by law, sink a well or two, etc., in the meantime cutting and removing what timber and wood there is, and then they abandon the entry.[15]

Until, more than a decade later, an Interior Department decision[16] held that the mere fact of the existence of natural growth thereon exempted land from its operation, the desert land act was notoriously used as a cloak for the fraudulent acquisition of timber.[17]

Equally flexible to determined and resourceful manipulation were two other laws in the ostensible interest of individual settlers and pioneers—the free timber act (20 Stat. L., 88), and the timber and stone act (20 Stat. L., 89), both enacted on the same day, June 3, 1878. Within a few months of its passage Williamson predicted of the second named act that it would

be taken advantage of by persons who want to make money quickly, to acquire the timber lands under its provisions at a very low price, and strip the mountain sides of their forest growth as rapidly as possible.[18]

To judge of Williamson's abilities as a prophet of profiteers one need only jump ahead in the records less than a decade to where

[14] *Ibid.*, 1885, p. 72.
[15] *Ibid.*, 1881, p. 377.
[16] Dillon *v.* Moulton, 15 L. D. (Department of Interior), 272. See also Laws, decisions, and opinions applicable to the national forests, 75. (1918).
[17] Donaldson, Public domain, p. 1221, 47 Cong. 2 sess., H. misc. doc. 45, p. 4.
[18] Message and Documents, abridgment, 1878-79. p. 598.

the report of Commissioner Sparks on the working of the timber and stone act in the California redwood district reads like the scenario of a sensational "movie"; detailing circumstantially bribery, corruption, intimidation, the "beating-up" and spiriting away of witnesses, the wholesale herding together of human flotsam for the signing of fraudulent applications, the bringing to bear of "pressure" upon government agents to make them "lay off" persons of prominence, the official aiding and abetting of the whole piece of rascality, and, as a finale to the whole, the securing by one lumber company of over 100,000 acres of timber land.[19]

Amazing? Not at all. Merely the logical full-flowering of inexhaustibility and the code of the Borderer. Beyond question the surveyor general of the woods in colonial New Hampshire, and later on the "Irish Apothecary" in Florida, could have told tales equally piquant though on a less gigantic scale. Theirs were simpler days. But the reader is invited to put Williamson's prophecy and its verification alongside McHenry's question as to "persons ready to profit by the occasion" and then think, not in terms of the higher economics but of human nature and common sense. Speedily he will obtain the answer to the worthy doctor's query. With it he will obtain, though at first he may realize it not, the answer to the forest problem.

It is needless to detail further the "working" of the laws above referred to, and of others,[20] in the obtaining of the lumber that western surging civilization demanded. If the reader would have the details let him study the General Land Office and Interior Department reports year by year for the last half of the nineteenth century. Needless, too, to more than mention the fact, that during that same period, and for a decade or so before, the country gave outright to states in aid of education and development and to railroad, canal, and turnpike companies in aid of their construc-

[19] General Land Office, Annual Report, 1886, p. 94 *et seq.* Until 1908 lands were sold under this law at a flat rate of $2.50 per acre upon application. The Interior Department then issued regulations calling for an appraisal of the timber and stone on a tract before sale, and for the regarding of $2.50 merely as a minimum figure.

[20] Such as, for example, the permit feature contained in Section 8 of the act of March 3, 1891 (26 Stat. L., 1095, 1099), as amended by the act of the same date (26 Stat. L., 1093, 1094).

tion, gifts of land that now seem prodigal but were then lightly regarded.[21]

Likewise is it unnecessary to dwell upon the fact that of these vast grants to states a not inconsiderable portion has found its way into private ownership; and that an at least appreciable bit of that portion was—and to some extent still is—forested.[22] Similar comment applies to the fact that much of the railroad lands gravitated to lumber companies.[23] It is needless not merely to ponder the fact but the why of the fact. For the student who hankers after the details of the process whereby, for example, some of the states obtained, under the swamp land grants,[24] tidily sizable tree-grown areas whereon rubber boots or even overshoes were useless luggage, the record of the transaction, with its not infrequent sequel of private acquisition at an exceedingly attractive purchaser's rate, is readily available in a thousand libraries. So is the record of the relinquishment act of June 22, 1874 (18 Stat. L., 194);[25] of the several acts culminating in the general right-of-way act of March 3, 1875 (18 Stat. L., 482);[26] and of the "forest lieu" clause of the important act of June 4, 1897 (30 Stat. L., 11, 36),[27] with later kindred legislation.[28] Let him read those records dispassionately.

The writer has attempted to treat in this section of that approximate half century of our history during which those virile yet destructive forces with which the thought of the pioneer is ever

[21] A total of approximately 370,000,000 acres was so given. See U. S. Bureau of Corporations, The lumber industry, I, p. 252.

[22] The lumber industry, I, p. 252, *et seq.*

[23] *Ibid.*, pp. 237-39.

[24] Acts of March 2, 1849 (9 Stat. L., 352); September 28, 1850 (9 Stat. L., 520); March 12, 1860 (12 Stat. L., 3). See also The lumber industry, I, pp. 253, 254.

[25] General Land Office, Annual Report, 1885, pp. 28, 29; Secretary of Interior, Annual Report, 1885, p. 41; 1886, p. 29.

[26] General Land Office, Annual Report, 1885, pp. 83, 311, *et seq.*

[27] The lumber industry, I, pp. 228-40.

[28] Acts of June 6, 1900 (31 Stat. L., 614); March 3, 1901 (31 Stat. L., 1037); July 1, 1898 (30 Stat. L., 597, 620); March 2, 1899 (30 Stat. L., 993); and May 17, 1906 (34 Stat. L., 197). The first two acts, together with the original "lieu" legislation of 1897, were repealed March 3, 1905 (33 Stat. L., 1264). The remaining acts are special legislation affecting the Northern Pacific land grant only.

imbued,[29] pent up, and, in a measure, restrained during those earlier years of uncertainty as to whether man was to conquer America or America man, finally burst forth like an undammed flood when the real western surge began, and, almost over night, demonstrated with terrible thoroughness the fallacy of inexhaustibility. That period of splendid destruction he has referred to as the era of magnificent plundering. Concerning which last used word another word or two must be said; else the picture presented will not be a true one. And this despite the fact that the word itself, as used, is a true word.

The evidence in the case, which has been merely hinted at above by way of pointing out its sources to those who care to go into it exhaustively, is cumulative and overwhelming to the effect that the land settlement laws and the land grant laws, both originally designed to further the carving up of the public domain into a great number of small holdings, each occupied by a sturdy pioneer home maker, had, in the case of the timbered lands, fallen considerably short of their objective. It is equally conclusive to the effect that an altogether different result was produced, and produced so tremendously that the timber ownership situation in the United States has been changed from that existing in 1850, when practically all of the vast American forest was publicly owned, to that of today, under which 80 per cent of the nation's timber is privately owned; of which 80 per cent, fully one-half, representing some one hundred and eighty million acres, is held by approximately two hundred and fifty owners.[30]

To say that this somewhat startling result has been brought about in little more than half a century by dishonesty alone would not be true. But to say that a very appreciable portion of it has been, is well within the fact. If the word plundering has any meaning at all, the last half of the nineteenth century in the forests of America can certainly be qualified with it most appropriately. Considering the scale on which it was done it would scarcely be an

[29] The Hon. J. Adam Bede, testifying before the Special Committee on Reforestation of the U. S. Senate, at Cloquet, Minneapolis, on May 12, 1923, said: "In the last generation everything was destruction, just as the early settler shipped away from home his best soil in the form of wheat, Now we are beginning to raise the output of our wheat lands; we are getting more wheat to-day because we rotate the crops. When a people first come into a new country they destroy it."

[30] 66 Cong. 2 sess., Report on S. res. 311, pp. 4, 33.

exaggeration to call it plundering plus. Scarcely, that is, were it not that there was more to it than the bald fact of tree stealing. The greater a movement is when measured in terms of the deeper, more subtle things of the spirit—the imponderables—the harder it is to interpret according to any of the formulas of exactness. Indeed, to do so is impossible.

Now the conversion in three centuries of that broad belt of North America most favored by nature from a howling wilderness into a nation the richest and most puissant the world has ever seen has not resulted from a *stir-up*. Neither has the fact that that nation, as to law and language, has developed according to the ideas of Magna Charta and the speech of Shakespeare and Milton. All these things have come to pass not because of the willing of man. To a not inconsiderable extent they have resulted despite it. Just why they have come about where, when, and in the manner they have; just what was the motivation that, away back in the centuries, set going the forces that have resulted in them: that is not for the writer to say. Whether it was a manifestation of omnipotence or merely some such thing as a combination of ethnic and geographic chance matters nothing for our present purposes. The point is simply that the thing has been done.

And yet not quite the point: rather the basis for it. The real point for us is that this amazing march of Anglo-Saxonism in the western world, this true " great movement " than which history records few, if any, greater, was bound in the course of its glacierly irresistible progress to ride down certain things which lay in its path. The Indian was one, the buffalo another, timber, a third—to mention but a few of them. The riding-down, moreover, was bound to be ruthless. The unique breed whose development in the new world of America has already been noted was not in the nature of things a soft breed. Like the conditions it had to overcome in order to survive it was strongly tinctured with the hard, harsh, and relentless. Equally inevitable under the circumstances was the philosophy it developed regarding natural resources.

But with all of a strong breed's fierce virtues there existed, as was natural, correspondingly unbridled vices. Of the number of these was the force making for the prodigal mangling, wasting, squandering, burning, and plundering of America's forests in the

last half of the nineteenth century, and the popular thought that regarded that force with complacence—if not with applause.

So that it will not do to dispose of that phenomenal orgy of hack, smash, and steal with any such sententious *plundering plus* despite the phrase's literal truth. Such pronouncements are just as true, and just as short of the real truth, as "timber thief" and "lumber baron." Plundering it was, to be sure, and on such a scale as to be magnificent. And just as surely were the plunderers thieves, but—

In that "but" and all the tangled skeins of impossibly conflicting forces and interests it connotes lies the resolvent of the paradox. It stands for that condition of affairs and even more strongly for that condition of thought of which the thieves and their plundering was the only true and logical expression. It goes back to that chemistry of human affairs out of which emerged the American people, that is to say, ourselves. It takes note of the fact that we, the American people, during the better part of three centuries evolved and fostered and developed an idea, the inevitable and ideal expression of which was the unthinking forest exploitation of the period we are considering; and of the further fact that until 1850 the only influence in America of any size that was not avid for the immediate conversion of all forests into farms was the Hudson's Bay Company. The Hon. Peter Jay, speaking in New York, in June, 1832, expressed the ideal in true "inspirational" style thus:

> The forest falls before the continual stroke of the axe and every day, every hour, adds to the productive domain of the Republic. Scarcely have the trees been felled when schools and colleges and churches and villages and towns and even cities spring up even before the stumps are withered.

And when Henry Clay in the same year counselled a policy of conservatism with respect to the public domain, the "American Spirit" thus rebuked him:

> He calls upon the fathers of the old states to shackle the energies of their bold, adventurous sons who come to seek their fortunes in the west. He asks them to place an overseer and a land agent at every point upon the public lands, and when the emigrant arrives, worn out by the toils of his journey and destitute of funds, he is forbidden to cut a stick of timber or erect a hut until by magic he shall have coined money to purchase a farm.[21]

[21] *Louisville Advertiser*, quoted in *Washington Globe* for May 28, 1832.

"Great Movements" run their courses and fulfill their destinies in their own ways. They observe no laws, but make their own as they are needed. That the westward trend of the Anglo-Saxon was smashingly ruthless, that in the dimness of its knowledge it did some things in some ways that to us, in the fulness of ours, seem deplorable—these things were as inevitable as the tides. Heroic conditions bred for their overcoming primitively heroic men with viking, berserkian, viewpoints. There was so much to do and so little time for the doing. The fairest remaining virgin area of the world had to be made into the future home of the Anglo-Saxon in a mere few centuries. That was an infinitely bigger thing than the preservation of a few trees, or a few million acres of trees.

Furthermore, making all and generous allowance for the oft-reiterated, half-true truth that the people were "led on" into a squanderational debauch by certain wicked "interests"[32] the uncomfortably substantial fact remains that the "led-on" did not a little leading themselves. When a man by a long persisted-in course of conduct creates conditions that make his robbery both easy and profitable, sooner or later he will be robbed. So with a nation. The "persons ready to profit by the occasion" will not be lacking. Certainly, they never have been in our history. The man who invites his own robbery robs himself. The nation that not merely invites but in a very real sense enforces its own forest spoliation, is at least equally guilty with the actual perpetrators of the crime.

And it is to be remembered that during all that terrific flare-up of material development between the fifties and the opening years of the present century, a flare-up that would have guttered out like a wet candle wick without cheap and abundant wood, the only ways in which that indispensable material could be obtained in the raw were ways smacking of the devious. Actually, until the year 1897, and practically not until several years later, there were only three ways in which government timber could be obtained legally: one, by

[32] "The public demand was largely directed by the interested parties."—U. S. Bureau of Corporations, Lumber industry, I, p. 244. But is this true? Did the "interested parties" "direct" so much as they jumped aboard a wild stampede and rode it to fortune? Under the circumstances, that acquisition is the better part of valor is hardly to be condemned with undue severity.

purchase of timber lands outright at cash sale;[33] another by permit under Section 8 of the act of March 3, 1891 (26 Stat. L., 1093, 1094); another by way of the homestead act or one of the several laws supposedly in the interest of settlement which have been referred to above. All these methods were wide open to fraud as has already been pointed out; and all, and especially the last one, were inadequate. Under it timber could be obtained in tracts of 160 acres per person. But the value of the timber on a 160-acre tract goes but a short way toward the justification of the tremendous investment necessary for the large scale lumber production which the country's needs required.[34] In short, a society in the midst of a full flood of development to which lumber was as the breath of life, and possessing virgin areas of timber lands literally imperial in extent, either could not or would not administer those resources in sane and practical fashion. Needing lumber desperately, it at once shackled lumber's natural flow and made dishonest lumbering ridiculously easy. The "persons ready to profit by the occasion" did the rest.

No wonder it was declared by an employee of the General Land Office in 1891 that

the laws provide neither an adequate method for the protection of the public timber, nor for its disposition in regions where its proper use is imperative.

and that

the effect of existing legislation is to force the whole population over large areas to steal the timber, which is as necessary for their

[33] Cash sales were done away with finally by the acts of March 2, 1899 (25 Stat. L., 854), and March 3, 1891 (26 Stat. L., 1095). Only land which had been "offered" at public auction to the highest bidder at not less than $1.25 per acre could be bought. Naturally there were few bidders, because as soon as land was in the "offered" class it could be bought in unlimited amounts at a flat rate of $1.25—in certain exceptional cases of $2.50—per acre at private sale. A tract of 47,000 acres in the southern pine belt so purchased in 1882 sold—for the timber rights alone—in 1911 for close to $5,000,000. About 150,000,000 acres were disposed of under the cash sales system, mostly in the South and the Lake States; to a comparatively slight extent elsewhere. The system was taken advantage of very slightly by actual lumbermen, but was worked overtime by timber speculators.—U. S. Bureau of Corporations, Lumber industry, I, 185, 256-58; II, 147-49. See also Hough, Report on Forestry, I, 12 *et seq.*

[34] Ise, United States forest policy, 73, 74.

use as settlers and pioneers as the water that runs in the streams by them. This has so demoralized this community that convictions for theft of timber or verdicts for damages for the government are rare.[35]

But the real heart of the matter was touched by Carl Schurz in an address before the American Forestry Association in 1889. After paying his respects collectively to miners, prospectors, hunters, settlers, railroads, lumbermen, and plain thieves for the parts they were respectively playing in the unchecked plundering and destruction then proceeding full clip, be added:

It is all these but it is something more, and, let us confess it, something worse. It is a public opinion looking with indifference on this wanton, barbarous, disgraceful vandalism. It is a spendthrift people recklessly wasting its heritage. It is a government careless of the future and unmindful of a pressing duty. . . . It is that spirt of levity so prevalent among our people which teaches to eat, drink, and be merry, unmindful of the reckoning that will come tomorrow. It is the cowardice of the small politician who instead of studying the best interests of the people trembles lest doing his full duty may cost him a vote, and who is not seldom apt to fear the resentment of thieves more than that of honest men.

Along with this utterance it is well to consider another made by the same man a decade earlier, when, as Secretary of the Interior, he pointed out that

The traditions of a time are still alive when the area covered with virgin forest in this country was so great that the settler might consider the trees on the land he occupied as a mere difficulty to be overcome and to be swept out of the way.[36]

Those few sentences are well worth pondering over. They are more than a miniature history of America's forest. They even constitute more than a striking epitome of the story of America. They tell the tale of civilization and of the two interacting and re-acting forces that drive it on—the spirit of adventure running ahead, slashing and smashing the jungle; the spirit of order, system, and law following after and setting the mess created by its forerunner to rights; the one pulling the other on; the other holding

[35] E. A. Bowers, in *Forest Leaves* for June, 1891. Vol. III, No. 6.
[36] Secretary of the Interior, Annual Report, 1878, p. 15.

the one back. So, through the millions of centuries, has the race climbed out of the slime.

Even more incisive is the comment of a careful observer upon the feeble effort at forest protection made by government in the eighties—an effort we shall notice more in detail later. Said Donaldson, in 1884:

> At present a force of special timber agents are employed under the direction of the Commissioner of the General Land Office, charged with the care of the timber lands. The force . . . is un-American and unpopular. The necessity for it is due to the fact that there is no general law for the disposition of the timber lands of the United States. The statements of these agents are, of course, *ex parte,* and the public are not in love with nor do they yield willing obedience to them. Persons do not usually depredate upon the public timber for mere wantonness, but frequently they are forced to become depredators through want of the timber for actual or commercial use; *and the lack of a law for its sale.*
> * * * *
>
> The difficulties (*i. e.,* of suppressing depredations) arise from a variety of causes, chief among which has been and still is the impossibility of purchasing, in a straightforward, honest way from the Government, either timber or timber-bearing lands.
>
> Until a very recent date, no public lands in the States of Arkansas, Louisiana, Mississippi, Alabama, or Florida could be procured in any other manner than by a compliance with the homestead law. This condition of the law was the primary cause of thousands of fraudulent homestead entries. . . .
>
> Until the passage of the act of June 3, 1878 (20 Stat. L., 89), entitled "An Act for the Sale of Timberlands in the States of California, Oregon, Nevada, and in Washington Territory" [37] there was no manner by which timber or timber lands in either of the States or the Territory mentioned could be obtained excepting by settlement under the homestead and pre-emption laws, and by the location of certain kinds of scrip and additional homestead rights, which cost several dollars per acre.
>
> Settlements upon timber-bearing lands in the States and Territory mentioned in the Act, under the homestead and pre-emption laws, are usually a mere pretense for getting the timber. Compliance with those laws in good faith where settlements are made on lands bearing timber of commercial value is well-nigh impossible, as the lands in most cases possess no agricultural value, and hence a compliance with the law requiring cultivation is impracticable.
> * * * *

[37] Extended to all public land states in 1892 (27 Stat. L., 348).

The law . . . is onerous, and ameliorates the condition existing before its passage but very little. . . .

* * * *

Another Act was approved on the 3rd of June, 1878 (20 Stat. L., 88), entitled "An Act authorizing the citizens of Colorado and the Territories to fell and remove timber on the public domain for mining and domestic purposes," by the provisions of which settlers and other persons may take timber for mining and agricultural purposes from mineral lands.

The provisions of this law, when understood, mean but very little. *Timber may be taken from mineral lands.* Perhaps not one acre in five thousand in the State and Territories named is mineral, and perhaps not one acre in five thousand of what may be mineral is known to be such. The benefit of this law to the settlers is better understood when these facts are known.

* * * *

The population of two states and seven territories should not longer be compelled by the laws of the country to be trespassers and criminals on account of taking the timber necessary to enable them to exist, as is the condition to-day, and as it has been, according to law, ever since settlements were commenced, or since the policy of selling lands for cash has been abandoned by the Government.[28]

Assuredly America's forests were plundered—by the American people. Pioneer thought, the point of view of the spirit of adventure, had to run its appointed course. That it ran somewhat beyond that course and played the devil with certain material things of great value is cause for deplorement, to be sure. But it is not cause for putting the blame on the other fellow and giving way to despair. The American people squandered their patrimony. The American people alone are to blame. But at that did they not come pretty close to getting value received? Has, after all, their typical Anglo-Saxon muddling with their forest been so expensive?

There is in truth another side to the doleful tale of denudation, devastation, plunderation. It is possible for a man to squander a fortune and win a greater in the process. Or to lose in gold and gain in character. Seldom, however, does a spendthrift beat the game spiritually as well as materially. But is not that after all what America has done in the course of her woodland wasting? Measured by the dollar yardstick does the billion or so in timber

[28] Donaldson, The public domain, 542, 543, 47 Cong. 2 sess., H. misc. doc. 45, p. 4; also 46 Cong. 2 sess., H. ex. doc. 46, p. 4.

that has been wasted or stolen begin to compare with the tens of billions of solid values represented by the empire that the spirit of the Borderers has made an accomplished fact since 1850? And is not that very spirit of the borders a resource worth an infinitude more to America than all the material resources it has unquestionably squandered? That it has had its unlovely aspects, is not to be denied. It has been crude, dishonest, ruthless—as has been every national spirit at its outset that had its beginning in the wilderness.[39] It has made mistakes. It has even committed crimes. It has been offensively bumptious. It has been insincere. None but a very spurious sort of Americanism—and one that will generally be found, upon examination, to be hyphenated—will deny these things. But even so, even multiplying these excesses of an undisciplined youth ten fold, when one sets over against these evils an infinitely vaster bulk of accompanying positive good, the greater part of their sinister aspect disappears. Besides that virile dauntlessness, that "irreverence for the impossible," that resourceful initiative that has made America what it is, they loom, after all, rather small.[40] One can surely say that a thing that has made certain the justice and the ordered liberty of the Anglo-Saxon, that has survived and outgrown the effects of civil warfare, that has but yesterday thrown its weight into the scale to save the world from domination by a fantastic blend of modern science and mediævalism—one can surely say that such a thing atones for a multitude of sins. With such a thing to show for them, have America's forests been wasted after all?

Waste depends. Apparent extravagance is oftentimes real economy. "There is that scattereth and yet increaseth; and there is that withholdeth more than is meet, yet it tendeth to poverty." If one prefers a forest managed with meticulous care, then very well; the era of magnificent plundering was a terrible national tragedy unrelieved by any tiniest feature of good. But if one has vision enough he will see that there was much more to it than a mere vulgar riot of smash, grab, and devil take the hindmost.

[39] The spirit of Hengist and Horsa and their followers, for example, was not exactly angelic, despite the famous quip in the Roman slave market.

[40] "It is mainly to the indomitable energy, hardihood, and daring of the pioneer that we are indebted for the discovery and development of the rich gold and silver districts of the country." 45 Cong. 2 sess., S. rep. 122.

Let us not, therefore, decry overmuch the spirit of the Borderers and thereby make of ourselves snobbish sneerers at forbears who were less lettered than we perhaps but every whit as worthy. The big, basic, meaningful things they knew as well as we do—maybe better. And what little we do know that they didn't we owe, after all, to them.

That whimsically wise and lovable spirit, William Osler, once brought out this thought in addressing a convention of physicians. In tracing the history of the healing art Dr. Osler made a parable. The development of medicine, he said, was like an ancient harvest. First into the fields of grain went the reapers who with bold, slashing strokes gathered in the greater part of the wheat. To them corresponded the pioneers in medicine who accumulated in a rough way the great mass of medical knowledge. After the reapers came the gleaners, who went about gathering up here and there a stray stalk the reapers had missed and adding it to the general store. Their medical prototypes were the patient investigators of the eighteenth and nineteenth centuries, who by painstaking research confirmed some of the older beliefs, disproved others, and added a little that was new.

Finally, there were turned into the field at eventide, their way made easy for them, a great flock of geese that ran hither and yon seeking a chance grain fallen from an ear. When one found a grain he would startle high heaven with his triumphant honkings, as if he were claiming for himself the credit for the whole harvest—for having borne all the burden and heat of the day. "Gentlemen," concluded Dr. Osler, "we are the geese."

CHAPTER VI

ADVENTURE'S HEYDAY

The discovery of America meant more than the finding of a new world. It meant the making of one. That Spirit of Adventure which had been halted by the Lands Ends and Finisterres of Western Europe, and had, in consequence, been caught up with and fairly well fettered by the slower going Spirit of Order, now saw spread out before it what seemed an infinity of new land wherein it might run wild and expend its energies. Small wonder that the resultant forward swirl was so swift as to smash some of the old and settled things; perilously to strain if not for a time absolutely to break the harnessing which Order had put upon Adventure. Out of that wild bursting forth came a changed world. It divided Anglo-Saxondom into two nations. It backwashed from the remote portages and trails of the *coureurs de bois* and played a part—and not by any means a small part—in bringing on the French Revolution.[1] It set going certain real "world movements" the end of which no man can as yet foresee, but the present predominating feature of which looms for all to see—the towering might of America in the affairs of the world.

Here again is the story of the forest, the story in miniature of the march of mankind. New Hampshire, Florida, the westward rush—there is more, much more, to all of these episodes than merely timber. That is but a phase. A very vivid phase, nevertheless, through which shines the meaning of the never-ending conflict between Adventure and Order, between the thought of the pioneer and the viewpoint of settled society.

How one-sided that conflict was from 1600 to 1850 is apparent to any reader of the woodland history of the period. Adventure ran away with things. Order was distanced. Distanced, but never quite out of the race. Order possesses terrible stamina. Were all

[1] "The Coureurs de Bois were an object of horror to the King. They shocked his instinct of discipline and order."—Parkman, The old régime in Canada, II, 109.

the world to lapse into anarchy, still would Order utimately prevail. Storm clouds and lightnings dominate the scene for a brief space with fearsome representations of chaos; but they soon pass away and Polaris is seen to be still on a line with the Dipper's edge.

During all those years, therefore, when Order might seem to have been almost non-existent in the American forest, it was, in fact, plugging along in its indomitable way; for long exerting no appreciable influence, and then, slowly, almost imperceptibly, tightening its grip, strengthening its position.

That it was not entirely inarticulate, even in the earliest times of the colonies, we have already seen. The early forest statutes, both crown and colonial, ineffectual as all legislation is that lacks general comprehension and general approval, had, nevertheless, influence of a sort. They stood, at all events, as a sort of perpetual reminder that ultimately a fiddler would have to be paid. They constituted a solemnly formal warning by wise old Order to heedless young Adventure to take counsel against an inevitable day of reckoning. Few there were, of course, who comprehended their real significance; yet each generation there were a few more; and so the thought persisted; so by insensible gradations did the drag upon Adventure's blind rushing forward become stronger.

The shrewd observations of Dr. Schoepf anent the possibility of a future lack of "a bit of wood over which to hang the tea kettle" were the comments of mature experience upon the brashness of inexperienced youth; of flouted Order upon cocksure Adventure. As such it cannot be said they marked any distinct advance of orderly thought, any toning down of Adventure. But there they stood at any rate for the thoughtful to read. And, happily for the world, there are always at least a few who can see over the horizon.

But other things than learned observations were working—things painful both to the hide and the hoard and, therefore, pricking to the type to which words such as the good doctor's were but visionary speculations. We read, for example, in a book published in 1776,[2] that

> timber grows so scarce upon the south coasts (*i. e.*, of New England) that even fire wood in some parts is not cheap and is forced to be brought from Sagadahock.

[2] American husbandry, I, 83, 84; 156, 157; 265.

and that

wood grows very scarce near Philadelphia, however plentiful it may be in the remoter parts of Pennsylvania: the first settlers, with the usual foresight of the Americans, destroyed the timber as if it was impossible they should ever want any; which, with the continued consumption ever since, for building, firing, and by iron works,[3] have so lessened it that wood is almost as dear at Philadelphia as it is in some parts of Britain; indeed, in winter, firing is one of the most expensive articles of housekeeping in that capital.

And not so many years later—1817 to be exact—a certain gentleman in a certain learned work deplored the shortage of wood in the larger cities of America, and remarked the yearly bitter complaints about the dearness of fuel[4] in a era long before labor troubles in the anthracite fields had been dreamed of. Incidentally, this same gentleman predicted the speedy disappearance of the live oak, doubtless after some observation of the ways of the "persons ready to profit by the occasion" and of the flabbiness of a naval oak policy long on threats but short on making good.

But pitiful as that flabbiness was, it marked a great event. It marked the beginning of the coming true of Dr. Schoepf's clear-headed prophecy. "Experience and necessity" were the things he predicted would bring about a change. They did. Experience of foreign aggression and necessity for means of defense against it

[3] Schoepf speaks of the exhaustion of 20,000 acres of woodland by the Union furnace in New Jersey in fifteen years, resulting in the enforced abandonment of the works for lack of wood.—Travels in the Confederation, I, 37. This circumstance is worth remembering. It had an interesting parallel a century later.

[4] F. A. Michaux, in Northern American Sylva, I, VI. This distinguished French botanist had previously spent ten years—1785 to 1796—with his equally distinguished father, André Michaux, exploring North America and making a monumental study of its forests. The elder Michaux, who wrote "A History of the Oaks of North America," was considered as early as 1793 for leading such a Pacific exploring expedition as was afterwards headed by Lewis and Clarke. He had some correspondence in that year with Jefferson and the American Philosophical Society of Philadelphia upon the subject. He became, however, so deeply involved in intrigues with the Kentucky borderers as the catspaw of Citizen Genet that he was forced to let the chance slip. The son visited America again in 1802 and 1806-07 to complete the collection of material for his great work mentioned above. By his will, made in 1855, he bequeathed $12,000 to the American Philosophical Society for the encouragement of silviculture and $8000 to the Society of Arts and Agriculture of Massachusetts for the same purpose.

forced, as we have seen, Adventure to eat its pride and actually go to school to Order. Experience and necessity—and time. The real significance of the live oak episode after all is just this—that time enough had run for the great American wave of Adventure to acquire a settled, toned-down element. Order and Adventure did not now stand, as before, for England and America. Instead, they stood, respectfully, for the " settlements " and the frontier, for the older sections which had got their start through Adventure and were now fain to settle down and play the gentleman, and for the Borderers who now proposed by adventurous processes to " get theirs."

In plain language America was definitely becoming " civilized." An " ordered fringe " had been established along the Atlantic seaboard too strongly to be overwhelmed by any resentful, demagogue-inspired, backwash of that wild and fearless—and, not infrequently, lawless—element that, beyond the Alleghenies, to some extent beyond the great river, was slowly pressing to the West. That ordered fringe represented the new nation's created wealth, the major part of its culture and education, its facilities for luxurious living. Naturally, therefore, it represented its most developed sentiment for that which makes these pleasanter things secure—law and order.

Natural and inevitable, all this, of course; as much so as the evolution of the groomed and tailored sophomore out of the bath-hating school boy; nor is it a whit less lacking in those things that add to the gayety of nations. How easy it is, if we want to make a picture of it, to conjure up, say, a dining room of the thirties, where, in a pleasant atmosphere of fire-lighted mahogany, silver, and Copley portraits two gentlemen dally with the Madeira. One, the guest, is English, a business visitor to America. The other, the host, possesses a New England ancestry running back to the " Pied Cowe," an ample fortune, a " fair brick house " full of Hepplewhite, a fleet of staunch clippers, a Harvard degree, and a membership in the Society of the Cincinnati.

The talk, somehow, veers to lumber, to timber, to the American forests, which the guest considers " extraordinary." And that gives the host his cue. He has but recently returned, it seems, from a trip to the Far West, that is to say, to the wilds of Wisconsin, whither he went to inspect some land. What impressed him there was not so much the extraordinary forests as the extraordinary

character of the people inhabiting them. He was shocked at their lawlessness. They had no regard for property rights. They stole the trees from the public lands right and left. They had even stolen some of his timber, and had been inclined to be somewhat broadly facetious about it. That sort of thing, he opined, was all wrong. Government should suppress it with the strong hand. The forests belonged to the nation, not to particular localities. It was monstrous for people to enrich themselves by the private appropriation of that which belonged to all.

Now the guest, as it chanced, had been regaled, aforetime and otherwhere, with a history of the family of his host of the evening; a vastly interesting history, colorful and vigorous, dealing, as it did, with strong, able, human men. It was a tale of daring woodsmen, two-fisted sea captains, merchants shrewd at driving a bargain, yet scrupulously square in their side of its observance. It was their generations of endeavor that had built up the solid structure in whose pleasant effulgence host and guest were now basking. Really, the Englishman had been moved to admit to himself at the recital, America was an "extraordinary" country and the Americans an "extraordinary" people.

It may have been the Madeira, it may have been a freak of flame reflection upon oil-painted canvas; probably it was a bit of both: at all events just at the moment when the host reached the climax of his denunciation of the despoilers of the nation's forests a thing occurred that truly was extraordinary. Over a grim and craggy face which gazed down out of its frame from the wall opposite the guest there rippled a broad grin. Upon the startled Briton there was bestowed by the dark and crackled canvas of the founder of the family fortune, an infinitely knowing wink.

But climax and phenomenon were not the only things coinciding at this exciting juncture. For at the same precise instant of time there flashed, lightning clear, across the guest's memory the recollection of what he had been told as to how the original of the winking portrait had got that start in the world that had made possible the China clippers and the counting rooms of later years. Before there had been ships at sea, ran the story, there had been lumber ashore—staves and bolts and things. And there had been a certain individual who, in a day when flouting the King's Broad Arrow had been fashionable, had so out-flouted the other flouters

as to be regarded by them with a peculiar awe. It was even related of him that he himself used to put the broad arrow on desirable trees that he was temporarily unable to appropriate in order to scare away some of the less hardy of his rivals.

Such an amazing trinity of the heard, seen, and remembered nearly sufficed to jounce the guest out of the famed imperturbability of his nation. As it was he was shaken. The walnut he was cracking at the moment was smashed to a pulp.

"My word!" he exclaimed. "Most extraordinary!"

"Isn't it?" innocently responded the host; adding, with bitterness, "the damned thieves!"

That peevish outburst (which is not quite such pure fiction as might be imagined) cannot be said to have typified anything in the nature of a growing protest, general, or even beginning to be general, among the people at large, against the old idea about forest affairs which had prevailed since the earliest times. It stood for something, but not that. What is meant was just this—that here and there, in spots in the longest settled regions, where clean linen had become fairly common and where Madeira had largely replaced hard cider and corn liquor, a purely American type of orderly thought was now and then to be heard inveighing against borderism, demanding that government take strong measures with the "damned thieves."

Government, of course, was not ready to do any such thing; would not be this many a year. That sort of thing lay in the future on the far side of a great expanse of "experience and necessity" still to be traversed. Gestures, however, it could and did indulge in; gestures comparable in their effectiveness to thimbled forefinger rappings and waggings at apple-stealing urchins.

There was, for example, that curious and somewhat unsavory naval fiasco which we have just examined, the never-attained object of which was particular rather than general. Slightly later in time as regards actual beginnings, though in fact contemporaneous for a considerable period, came a more inclusive gesture, applying to the whole orchard rather than to only a few trees. General forest protective effort was, in its beginning and for long thereafter, hardly worthy even of the thimbled-forefinger label. It was destined, however, to grow; to become, in time, a fist; still later a cudgel-wielding fist.

Sources of information regarding this beginning of governmental interest in the forests of America as forests, rather than as mere reserves of raw material for frigate frames, are scant; particularly scant when compared with the abundant and readily accessible live oak documents. Just when government took its first definite step toward a general broad arrowism may be recorded somewhere; if so the writer has been unable to find it. In all probability the act of March 3, 1807 (2 Stat. L., 445), comes as near to being entitled to the honor as anything. This act was devised to prevent that settlement upon public land prior to its purchase or formal legal acquisition, which was afterwards legalized by the pre-emption act of 1841. It makes no mention of timber directly, though its references to trespass and waste might logically be considered as extending thereto by implication.

In any event, when, in April, 1821, a complaint was made by one Beauchamp[5] of timber wastage upon the public lands in Illinois, and when that complaint was passed along by the General Land Office to the Secretary of the Treasury[6] and by that officer to the Attorney General, the resultant opinion was based very largely upon the powers delegated in that statute. Under those powers, Attorney General Wirt opined, the federal authority could remove timber wasters by military force and subject them to fine and imprisonment. Independent of them, he further declared, the same authority possessed all the common law and chancery remedies belonging to individuals in similar cases for the protection of their property. He concluded, however, by suggesting the advisability of legislative enactments with respect to timber in general as clear-cut and definite as the 1817 law respecting naval timber; expressing a doubt as to whether the general offense, "from its greater fre-

[5] This was probably William Beauchamp, the famous itinerant Methodist preacher of that period. He was in Illinois in 1821, assisting in the founding of the town of Mt. Carmel, and his well-known zeal for "planning public measures and economical arrangements" would have perceived in Dismal Borderism, it is safe to say, a power of darkness to be assailed.

[6] From the days of the Confederation matters pertaining to the public domain had been under the jurisdiction of the Treasury. The General Land Office was organized as a Treasury bureau in 1812 and maintained that status till transferred to the Home (now Interior) Department by the act of March 3, 1849 (9 Stat. L., 395), by which that department was created. There it has since remained.

quency and the greater secrecy and security with which it may be committed," did not merit "a still severer reprehension."[7]

This opinion was dated May 27, 1821. It was transmitted to all registers and receivers of land offices in a circular of the Commissioner of the General Land Office a few weeks later—July 13, 1821. So far as the writer has been able to ascertain, this circumstance marked the first definite governmental expression in our national history touching a policy with regard to our forests in general. It told the men in direct control of the forest areas—or those, at least, more nearly approximating that status than anyone else—that those areas belonged to the nation, that they were not to be looted at pleasure, and that looters could, and should, be laid by the heels therefor. Registers, receivers, and district attorneys were ordered "to use every proper means to detect the authors of such mischiefs." The local land officers were directed to advertise in the journals of their respective territories the following bill:[8]

NOTICE TO INTENDING SETTLERS, WHO COMMIT WASTE ON THE PUBLIC LANDS

Those lawless persons who are guilty of intruding on lands of the United States and of committing waste of public timber, are hereby notified, that measures having been taken for a rigid enforcement of the laws of the United States in such cases made and provided, they are hereby ordered to desist from such offenses, forthwith, otherwise they will be prosecuted to the utmost rigor of the law.

Given under my hand at the City of Washington, this 11th day of July, 1821.

By order:
JOSIAH MEIGS,
Commissioner.

But in real effect this circumstance did something much more significant and much more interesting than the things mentioned in the preceding paragraphs. Within fifty years after the last bit of billingsgate was heartily flung at the surveyor-general in the woods of New Hampshire, it made every register and receiver of every American land office a deputy of a new—and American—surveyor-general; and by so doing proclaimed the Broad Arrow to all the land as the recognized law of the land. It thus, at a stroke hurled

[7] Public Lands: Laws, instructions, and opinions, II, 16 (1838).
[8] The word is used in the pontifical sense.

to all parts of the border, *i. e.*, to Adventure's realm, the bold dictum of Order that Order possessed the right to boss and ultimately meant to exercise it; if necessary, by the "irritation of woodsmen." The year 1821, thus, marks Order's greatest advance in forest affairs since the beginning of our national history. The thought underlying the viewpoint of the "settlements" was, as it were, broadcast to every corner of the frontier, and a definite American alignment of the two forces was for the first time established in a country-wide sense. A very great and important first step was this sweeping projection of this basic thought, though the frontier was not destined to give any particular practical heed to it for many decades to come.

A year before the Rev. Mr. Beauchamp's complaint started things in the manner we have seen, a congressional enactment—act of May 15, 1820 (3 Stat. L., 592)—created "an agent of the Treasury" and assigned to him the duty of superintending all suits, etc., for the recovery of money, chattels, etc., in the name of the United States.

Whether this officer, whose assigned powers and duties would have made him the logical prototype of the surveyor-general of the woods, ever made any serious attempt to exercise those powers, the writer has been unable to discover.[9] No such uncertainty, however, attaches to the officer who fell heir to his prerogatives a decade later.

The act of May 29, 1830 (4 Stat. L., 414), created the office of Solicitor of the Treasury, and transferred to it all the powers and duties formerly appertaining to the agency; and also assigned to it the further duty of instructing marshals, district attorneys, and similar United States officers, regarding the prosecution of suits to which the United States was a party. A year later there was enacted the law of March 2, 1831 (4 Stat. L., 472), which has been

[9] There is evidence, however, that the Treasury Department in general was not insensible to the timber situation at this time. Instructions were issued by the General Land Office on August 12, 1828, to the district attorney for East Florida to prevent depredations on live oak and other valuable timber on *the general public domain*. And on May 28 of the year following the Commissioner of the General Land Office submitted to the Secretary of the Treasury the recommendations of the district attorney for Middle Florida that the general instructions relative to depredations on the public timber be relaxed. On the 11th of June following the Secretary of the Treasury refused to take such action.—25 Cong. 3 sess., H. doc. 248.

referred to above. The near conjunction of these two laws definitely paved the way for the first actual governmental activities looking to the suppression of timber trespass in a general sense. They furnished the country with an officer whose duty it was to combat timber spoliation on the general public domain, and armed that officer with a statute designed definitely to outlaw that offense.

But perhaps that last statement is a bit too sweeping. The 1831 law, it will be recalled, was peculiar in that it referred to only a limited and particular class of timber lands in its title—*i. e.,* to naval reservations—but it was so broad in its general enacting clause as to cover very clearly the entire public domain. Very clearly, that is, depending upon one's point of view. It is not to be doubted that the new officer charged with the duty of setting in motion the machinery of the laws in defense of the nation's "chattels and money" felt that the new statute gave him a roving commission to gun for timber thieves in every neck of the woods, naval or what not. There is just as little doubt that the Broad Arrow flouters of the day felt that the law touched not their activities so long as they did not ply the same on naval lands.

It is fairly certain that the Solicitor of the Treasury early took steps to make at least a show of safeguarding the forests, and that at least some advantage was taken by him of the broader view of the 1831 law. But just what action he took and just what machinery he set up in furtherance thereof, is a matter by no means clear. Whether he relied merely upon the registers and receivers or upon the marshals and district attorneys, does not with any certainty appear. There are various vague references to the early establishment of a force of "timber agents" under "instructions from" [10] or under "the supervision of" [11] the Solicitor of the Treasury for the "protection of trees" [12] but when this force was first created, whether very shortly after the passage of the 1831 act or not until several years thereafter, is nowhere made apparent. No definite action producing definite results would seem to be chronicled, as of an earlier date than 1841. Between October of that year and November of the year following we do know that there were instituted, under the direction of the Solicitor, no less than thirty suits

[10] Hough, Report upon forestry, I, 12.
[11] 47 Cong. 2 sess., H. misc. doc. 45, pt. 4, p. 357.
[12] 43 Cong. 1 sess., H. rep. 259, p. 4.

for stealing timber from the public domain—eight in Louisiana, six in Florida, twelve in Michigan, and four in Illinois.[13] Five of these Florida cases are of peculiar interest, inasmuch as they were all ordered by one "H. L. Thistle, agent for the preservation of timber on the public lands in Florida." Mr. Thistle we have already encountered in the rôle of a navy timber agent. The draping of this further dignity about him raises a cloud of doubt as to his exact status—or statuses. Was he really a member of a general protective force under the Treasury, and thus a holder, simultaneously, of two commissions under different departments; or was he merely carrying out orders of his naval superiors to give aid to the Treasury by having an eye, whenever possible, to the timber on the general domain?[14]

It would be interesting, of course, to know definitely just how Thistle came to be irritating simultaneously two sorts of woodsmen. But we can easily forego the pleasure in the greater enlightenment that they were actually being irritated in 1841—that on American soil a strictly home-grown variety of forest order was actually at grips with Adventure; that Government, albeit on a ridiculously small scale, was actually taking active measures against "the damned thieves."

That there was a struggle is not to be doubted. Evidence of it comes to the surface in the published records in 1847, when the case of Mr. Ephriam Briggs, of Michigan, got before the Supreme Court.[15] The case involved the stealing by Briggs, from off the public domain, of a trifling amount of timber, for which offense the government proceeded against him under the broad construction

[13] Solicitor of the Treasury, Annual Report, 1843, 28 Cong. 1 sess., H. ex. doc. 35.

[14] The latter theory is probably the correct one. The language of certain of the naval reports might seem to indicate that the naval agents were expected to do more than merely look after the actual reservation timber. See annual reports of the Secretary of the Navy, 1853, p. 448 and 1854, p. 458. It is significant also that the Solicitor's report for 1843 makes no mention of any other agent, either naval or general, than Thistle. Had a general system been actually established at that time, would not some of the other agents have been mentioned? It is also well to remember in connection with Thistle's Treasury activities that they all concerned *live oak depredations only on the general public domain;* and that the 1817 naval act covered live oak and red cedar on the general domain *as well* as on the reservations.

[15] United States v. Briggs, 5 Howard 208.

of the 1831 law. Sent back for retrial because of a technicality, the case again came before the high court two years later, and in the January term, 1850, the Court held that the enacting clause's language governed, and that the law applied not merely to live oak and red cedar on naval reservations, but to any description of timber anywhere on the public domain as well.[16]

The creation of the new Home Department and the allocation of the General Land Office thereto, about a year prior to the rendering of this important decision, has already been referred to. The probabilities would seem to be that just about here was the time the timber agent system was actually inaugurated. It is likely that the first agents were appointed about 1850,[17] the Secretary of the new department doubtless feeling that the Supreme Court's pronouncement as to the scope of the 1831 law made it his duty, as that member of the government directly responsible for the public domain, to take steps looking to that law's enforcement. "It is incumbent upon the Executive," wrote the Secretary in 1854, "so long as that law thus interpreted remains upon the statute-book, to see to it that it, as well as all others, is faithfully executed."[18] And this "seeing to it," the Secretary was informed by the Commissioner of the General Land Office a day or two earlier, was by means of the timber agent system, "in continuation of the policy which, it appears, was fully adopted by the Department of the Interior shortly after its organization."[19]

All of this may or may not mean that a definite protecting force had been inaugurated under the Treasury régime, and had been merely continued under the new administrative arrangement. The writer is constrained to incline to the "may not" view. The weight of probability would seem to indicate that it was the Briggs decision, in 1850—after the new department had been formed—that finally tipped the scales in the direction of a direct guardianship policy. It is not likely that any protecting force was ever organized under the Treasury.[20]

[16] United States v. Briggs, 9 Howard 356.

[17] Commissioner Williamson stated in 1877 that the first record of the authorization of timber agents by the Department of the Interior was dated April 23, 1851, 45 Cong. 2 sess., S. ex. doc. 9, pt. 1, p. 2.

[18] 33 Cong. 1 sess., H. ex. doc. 115.

[19] Not conclusive at this point, but at least suggestive, is the statement made in a speech in the Senate, in 1852, by Senator Dodge, of Iowa, to the

The references to the Solicitor, above alluded to, which might seem to indicate the pre-Interior Department creation of such a force, lose much of their mystery when examined in the light of the act of May 29, 1830, under which the Solicitor's office was established. The fifth section of that act imposes upon the new officers the duty of instructing district attorneys, etc., relative to the conduct of actions in which the United States was interested. Now inasmuch as the whole duty contemplated for the timber agents seems to have been the obtaining and furnishing of evidence to the proper federal law officers, upon which proceedings might be based, the appropriateness of their instruction by the same authority instructing the attorneys and marshals—whose auxiliaries in effect they were—would seem to be obvious. Accordingly, when the agent system was adopted by the new department, the practice, apparently, was also adopted of advising the Solicitor of the appointment of agents and of their acts; and of having him instruct them as to certain phases of their duties;[20] he also instructed local federal officers to lend them aid and coöperation. So that it may be entirely correct to speak of a force of timber agents under the "instructions of the Solicitor," even though that force was certainly not under that officer's direction after 1850 and very probably not before. It is entirely possible however, though the writer knows of no direct evidence to that effect, that the agent system was begun at the Solicitor's suggestion, after the Briggs case resolved the uncertainty about the law of 1831. At any rate begun it was, and the nation was committed, in theory at least, to the "irritation of woodsmen," not merely in connection with a couple of hundred thousand acres of live oak lands, but wherever trees grew on the public domain. From the local and special stage the idea of the Broad Arrow advanced to the national and all-inclusive. Order made bold to

effect that the general irritation of woodsmen was part of "a system of administrative policy commenced by Mr. Ewing," *i. e.*, the first Secretary of the Interior.—Cong. Globe, 32 Cong. 1 sess., Appendix, p. 365. It is interesting to recall in this connection that Lincoln, whose one congressional term ended March 4, 1849, made an unsuccessful effort to get the appointment of Commissioner of the Land Office under Ewing.

[20] General Land Office, Annual Report, 1877, p. 16. The language of this report is specific upon this point. But the tenor of a letter written by a timber agent to the Commissioner in 1854 would not seem to indicate that instructions were given to agents by the Solicitor in any sense directly. Probably they followed the advice of the federal district attorneys, who were, of course, under the Solicitor's instructions.

assert a broader sovereignty. The ancient theory of the King's Forest was not dead after all. It had merely changed its name to Nation's Forest.

But broad as was Order's assertion, the resulting attempted exertion was, as a practical matter, confined to a particular area. The agents in office at the time of the General Land Office Commissioner's statement to the Secretary, above alluded to, were restricted, as to bailiwick, to the states of Michigan, Wisconsin, and Iowa, and the then territory of Minnesota—in a word to the Great Lakes pine region.[21] No effort was made to protect the great forests of the Far West; nor was any protection extended to the southern pineries, beyond such attention, necessarily infinitesimal, as the naval live oak agents may have been able to accord them as a sort of side issue.

The reason for this concentration of effort is obvious. It was only in the lake region forests that depredations on any scale were being committed. Adventure, to be sure, had penetrated both to the Pacific and to the South, but in neither region had any reason for general forest exploitation on a large scale developed. The southern spoliations, notorious and flagrant as they were, were confined almost exclusively to one species, as we have already seen. The timber of the Far West was, comparatively speaking, still untouched and in no visible danger of being touched for years in the future.

But a vastly different condition existed with reference to the Lake States pine lands. They lay immediately, and most accessibly, adjacent to a vast virgin region of amazing fertility, of almost boundless possibilities for wealth development on the firmest of all foundations, and—what is very much to the point of our story—of comparative woodlessness. In the decades preceding the mid-century there began to be a great stirring of settlement throughout this lush and smiling land. Adventure's plowshare began the marking out of an empire destined, in less than a century, to surpass in wealth the fabled "gold and gems of Ormus and of Ind."

In its beginnings the Central West knew no such things as gold and gems—save perhaps as an occasional detail of the investiture of an itinerant gambler. They lay not beneath its soil, neither were they any part of the equipment of those westering "bold and ad-

[21] 33 Cong. 1 sess., H. ex. doc. 115, p. 2.

venturous sons," who came thronging in by flat boat and "Conestoga" for a share of its broad acres. In terms of created wealth the Central West started with stark poverty.

Nevertheless, there was formed at this time and place such a conjuncture of contributing circumstances potent for the speedy yet solid development of the resources of a very real imperial domain as had perhaps never before been seen. Upon a vast expanse of land of surpassing richness, requiring no outlay of treasure or heart-breaking toil to prepare it for the plow, there flowed a stream of land-hungry men, the descendants of those "most daring spirits of a daring race" who had crossed the Atlantic two centuries and more before.

This was not the first time Adventure had stood in the presence of wealth. But it was the first time the encounter had been just so circumstanced. Here was no irruption of barbarians upon the magnificent spoils of decadent empire; no attainment of Pizarric looters to Incan treasure chests. Here was adventure as keen, but tempered, withal, with the instinct of the "right good improver, discerner, doer, and worker in every kind," rather than maddened with the mere lust of the plunderer; hardened, too, by two centuries of struggle with the forest and with the "dark brute powers of nature"; exalted and given vision, moreover, with that new world sense of "spaciousness," out of which had flowed "inexhaustibility" and a wastrelism at once terrible and splendid.

Here, too, was wealth, wealth compared to which the glittering hoards of Peru were but a pittance; wealth wellnigh vast beyond conjecture; wealth invisible to the seeker after jewelled chalice and golden gear, but waiting only the strong arm of the building race to pour forth its abundance. That race was now at hand. A thoroughly typical representative of it was splitting rails in Illinois not so very long after the Rev. Mr. Beauchamp wrote his letter of complaint.

Here, in a word, were met the real treasure house of America and the one breed supremely fitted for its unlocking. Two centuries of struggle with the primitive; two centuries of spaciousness, of inexhaustibility, of wilderness wanderings, of forest fight and foray, had brought forth a people utterly different from any other people on earth. Basically Anglo-Saxon, having about them a bit of the Briton, a stronger or a milder dash of the Roundhead or Cavalier

colonial, they were, nevertheless, in a vastly larger sense most strikingly individual—a breed with a thought, a spirit, even with a look, absolutely its own. They had qualities of initiative and resourcefulness that would of themselves have been sufficient to stamp them with an individuality. But these strong traits were given a vividness by a certain deadly shrewdness, a keenness of perception that got to the gist of persons and of situations with startling directness, and a pungent sense of humor that was all-pervading. It was the American race, no less, that emerged from the Appalachian forests onto the pleasant and fruitful savannas of that great region that was to be, in vastly more than a mere geographical sense, the heart of America. That it was a strong race, a keen race, a race given to hurling cheerful ribaldry into the teeth of adversity, was only what was to have been expected of a race with such an iron testing-out. To contend with the forest of America and all that it stood for in the seventeenth and eighteenth centuries, and survive, a race must needs either have those qualities to begin with, or acquire them during the ordeal. With the American race it was something of both, but vastly more of the latter. The race that was to lay the strong and enduring foundations of the granary of America had woven into its inmost fibre ineradicable colorings created by its generations of forest struggle. To it, the forest had been a hard and merciless school, but a good one, giving it strength and wisdom and a way of being hard to daunt. Jeremy Belknap was highly prophetic when he wrote "The Foresters." The American race stepped full-grown upon the central plains the result, overwhelmingly, of forest influences—a forest race if such a thing ever existed.

For that reason, if for no other, the writer feels that the foregoing digression needs little apology. As has been mentioned before and will be again, the forest, directly and indirectly, has exercised a mighty influence upon American history. And nowhere was that influence more marked, nowhere more fraught with deep meaning for the future than right here at this vital period when what is perhaps the richest region in the world lay waiting the people destined to possess it.

But, as it happens, there is another reason; an even stronger reason with regard to our present theme. The conjuncture of favored region and fitted race that has just been sketched could not of itself, other things being as they were, have resulted in that almost

magical transformation of a waste place into that wealth-teeming land that is the great source of America's strength to-day. No race could have developed the Central West without wood,[22] least of all a race with the Inexhaustible Legend in its head and habituated by generations of prodigality to inordinate wood use. And in wood the Central West was very largely lacking.

From the standpoint of forest history this period can scarcely be scrutinized too closely. It is a true turning point. It set going the Era of Magnificent Plundering by creating a magnificent "occasion" to profit by. It forced upon government the faint beginnings of forest thought in a national, general sense; as well as the hazy dawn of a conception that land and the forest upon it were not necessarily things to be considered inseparably always. It forced the definite adoption of the Broad Arrow with respect to the whole American forest. It transformed the local skirmishing between Order and Adventure into a general engagement.

A contemporary utterance presents such a clear picture of the general situation that it is worth quoting. Said the Hon. B. C. Eastman, of Wisconsin, in 1852:

Upon the rivers which are tributary to the Mississippi, and also upon those which empty themselves into Lake Michigan, there are interminable forests of pine, sufficient to supply all the wants of the citizens in the country, from which this supply can be drawn for all time to come. A few years since, and that whole country was unknown to the white man. The planter and farmer of Missouri, Illinois and Iowa, had exhausted the limited supply of timber which the groves upon the streams in the prairie lands had afforded, and the demand for pine timber with which to fence their farms and build their houses, called into activity a class of persons who fear no danger, and whose courage and enterprise are equal to any emergency. At great risk, and with intense labor, these lumbermen—some of whom had been reared on the frontiers of New York and Maine, while others had been scouts in the settlement of the West—penetrated this forest, and erected mills upon the Menominee, the Black, Chippewa, Wisconsin, and Saint Croix rivers, and thus they opened a trade in lumber, which at the same time

[22] Henn, of Iowa, in a pro-railroad speech in the House in April, 1852, after drawing a graphic picture of the beauty and fertility of the Iowa prairie lands, said: "Yet vast quantities of this beautiful land is so distant from timber and so far from a market that unless some great thoroughfares are opened through it the major quantity will remain on the hands of the Government for years."

supplied the settlers upon the vast prairies of Illinois, Iowa and Missouri, and the cities and towns upon the Mississippi, with lumber, and opened a market for the corn, flour, pork, beef, and cattle of the farmers, which they took in exchange. By this internal and domestic commerce two objects were effected, both highly advantageous to the interests of the Federal Government. Without lumber with which to erect houses and make fences, the vast prairies of the lower country could not be settled and farmed profitably, or with success, and there were no supplies from which to draw this necessary article, but from the forests of the North.[23]

Great as the temptation may be to deal sarcastically with Mr. Eastman's ringing praises of the "class of persons who fear no danger," it will not do to overindulge it. It will not do because the fulsomeness has much in it that is true. Grant that the exploitation of the north woods reeked with Dismal Borderism, rubber fortyism, and all the other euphemisms for what was in bald fact "damned thievery," and you still have a long way to go to justify your virtuous sneer. Here, if ever there was one, was a critical period of American history; the key to the successful negotiation of which was wood. Wood was at hand in abundance in forests belonging to the nation. To get that wood where it was needed, then, was the supremely important thing.

Speaking generally, there were just four things government could do toward solving the puzzle that the westward trend of settlement very speedily presented. It could throw an army around the lake country and prevent the cutting of timber by military force. It could create a forests department and administer its woodland property, dealing out the wood as needed, either by direct operation or indirectly through contracting lumbermen. It could ignore the situation entirely and permit without protest unlimited spoliation. It could preserve the spirit of the Broad Arrow by an altogether inadequate assertion of authority that did not seriously interfere with the spreading of a largely larcenous forest harvest over the treeless areas.

It requires no acute analysis of these alternatives to demonstrate that the first three must be cancelled out. The political difficulties in the way of raising an army for the suppression of Borderers in a country overwhelmingly of the Borderer viewpoint, especially when their offense consisted of the needed utilization of a resource

[23] Cong. Globe, 32 Cong. 1 sess., Appendix, p. 851.

that everyone knew to be "inexhaustible," and still more especially when it was vividly remembered that an attempted suppression of precisely the same offense in the preceding century had been one of the tyrannies that had goaded the colonies into revolt—these difficulties need only be hinted at. The thing simply could not have been done.

Even more out of the question would any effective scheme of governmental forest administration have been. Such a thing at that day would have been physically impossible. The country, furthermore, was not mentally ready for it; the time was not ripe for it by several decades. Much more "experience and necessity" would have to be accumulated by a people whose previous experience had taught them that the forest was inexhaustible and that the Broad Arrow was the mark of the beast; and to whom necessity in a forest sense meant nothing, at the time of mid-west beginnings, more than the necessity for wood where wood didn't grow.

An utter surrender by government of all pretense at forest authority would have been, of course, both possible and easy. But it scarcely needs to be pointed out that in the highest governmental sense it would have been disastrous. There are occasions when it is both expedient and wise for Order to be looking the other way when Adventure is going it somewhat large with Order's ordinances; and cannily to bide a time more propitious for the application of the rod. But even so, the ordinance must be expressed at least. It is never anything but fatal for Order to quit out of hand. In short, the more one considers the time, the people of the time, and their temper and thought, the more inescapable becomes the conclusion that what happened to the Lake States forests was inevitable, and that the manner of that happening was perhaps the most fortunate that could have been devised. Borderism had a heyday in which it stole millions, wasted millions, and laid immense areas desolate, but it built an empire.

Order, perforce, held its hand from exerting its utmost might, but at the same time put forth effort enough to keep clear the proposition that its right to restrain was paramount. And in the meantime the sands ran for Order, for every step in the progress of Adven-

ture's Empire brought one step nearer the day when a fuller exercise of Order's powers would be expedient as well as right.[24]

Was this the result of America's possession at that time of an unusually wise and unusually far-seeing statesmanship? It is in no sense a derogation of American statesmen of the period to express doubt on the point. One cannot help recalling Clay's efforts in connection with the "bold, adventurous sons"; or remembering that the broad phase of the 1831 law has about it something more than a faint suggestion of the legislative accident. It is probable that this is but another of the many things for which the credit must be given to those logically indefensible Anglo-Saxonisms, "Wait and see" and "Muddle through."

It is exceedingly unlikely that the public men of that day were on fire with zeal to tackle a problem that every consideration of political discretion commanded them to avoid. Discretion is just as apt to be the better part of valor in politics as in animal husbandry; the better part of common sense as well.

The new Interior Department came into existence, as we have seen, in 1849, and the timber agent system was not far behind it. Mr. Eastman unloosed his eloquence anent the "class of persons who fear no danger" in July, 1852—call it three years, at a liberal estimate, after Secretary Ewing commenced his "system of administrative policy." That short period was more than sufficient for the woodsmen of the Lake States to voice their objection to being "irritated," even as their fathers had done in Broad Arrow days.[25]

[24] "Every great man, every genuine man, is by nature of him a son of Order. . . . His mission is Order, every man's is. He is here to make what was disorderly, chaotic, into a thing ruled, regular. He is the missionary of Order. Is not all work of man in this world a making of Order? The carpenter finds rough trees; shapes them, constrains them into square fitness, into purpose and use."—Carlyle, The Hero as King.

[25] There was naturally a great exodus of eastern lumbermen to the Northwest to "profit by the occasion" presented by the building of the Central West. Fuller, of Maine, complained, in the House, on March 30, 1852, of "the stalwart sons of Maine marching away by scores and hundreds to the piny woods of the Northwest." "And all I can say is," he concluded, "most fortunate is that State or Territory which shall receive the largest accession of them; for, like the renowned men of the olden time, they are famous for lifting up the axes upon the thick trees."—Cong. Globe, 32 Cong. 1 sess., Appendix, p. 389.

Mr. Eastman, for example, had more to communicate than ringing laudation. He had bitter complaint, as well; complaint of the harassment of his constituency by "timber agents appointed by the President without the least authority of law"; complaint of the "waylaying" of an honest pioneer for "cutting a sapling for a roof tree for his humble cabin" by a "Government agent having the President's commission in his pocket"; and, finally, what amounts to an ominous warning that his people were ripe for "open revolt" against an authority which, he declared, had it been directed by enlightened policy would have thrown open the forests to Adventure to use without stint as a reward for its hardships.

And Mr. Eastman was typical, not individual, in his bitterness. Some three months before he thus hinted at saw-log secessionism, his fellow-member, Delegate Sibley, of Minnesota, spoke in a similar bitter strain of the "outrages in Wisconsin and Minnesota." The laws under which they were perpetrated should be, he declared, "expunged" from the statute books as "a disgrace to the country and to the nineteenth century."[26] "Especially," declared Mr. Sibley,

> is *he* pursued with unrelenting severity, who has dared to break the silence of the primeval forest by the blows of the American axe. The hardy lumberman who has penetrated the remotest wilds of the Northwest, to drag from their recesses the materials for building up towns and cities in the great valley of the Mississippi, has been particularly marked out as a victim. . . . Sir, the time is at hand when the arbitrary exercise of power, such as I have alluded to, will be rebuked.[27]

And a few weeks earlier Senator Dodge, of Iowa, in his speech above referred to expressed regret that he had voted for the creation of the Interior Department in 1849, and declared that he would never vote again "to extend the power of this government." This change of sentiment had been brought about, he asserted, by governmental harassment of the people of the new states of the Northwest for cutting timber on the public domain. Complaining that the then Secretary of the Interior[28] was "equally hostile" with the first secretary "to the promotion of our new settlements" he concluded by saying that

[26] Which would seem to indicate that Mr. Sibley was a "progressive," if not a "forward-looker."

[27] Cong. Globe, 32 Cong. 1 sess., Appendix, p. 486.

[28] Alex. H. H. Stuart, of Virginia.

An obsolete statute, whose sole object was to prevent trespassing upon live oak timber which was wanted for naval purposes, is hunted up and enforced against our citizens, who are sued and harassed, *and their substance eaten out,* in the manner before described.

Have we not heard, somewhere, about this matter of the "eating out of substance" before?

The reaction on the then frontier region, in short, with regard to the broad arrowing effort of the new department, was instant, vociferous, and exceedingly hostile. The bull, in other words, discovered an immediate sensitiveness to rough handling. This was the beginning. Events thereafter followed swiftly and significantly.

The first of these events, chronologically speaking, was the passing on, by the Secretary of the Interior, of direct responsibility for the protection of the public timber lands, to the Commissioner of the General Land Office. The first agents had been appointed directly by the Secretary, and that officer had made of the whole timber protection matter a personal business. But the discovery that he speedily made—that the whole business was making him about as well-beloved in the West as the surveyor-general of the woods had been in colonial New Hampshire—operated to slow up his enthusiasm. It was in vain that assurances were given that the object of the new activities was not the harassing of actual settlers but the prevention of spoliations by transient exploiters seeking to profit by the occasion.[29] Very little of the colonial timber stealing had been done by "actual settlers," but that fact had not enlarged the popularity of the Broad Arrow one whit. "Between the Surveyor-General of the King's Woods," we are told, "and the lumberers there was no love."[30] There was little, if any, more between the Secretary of the Interior and Mr. Eastman's "persons who fear no danger."

So on January 19, 1854, "all the letters and other papers that had theretofore been filed in the Department in relation to depreda-

[29] Such assurances were given by Secretary Stuart to Senators Walker and Dodge, of Wisconsin, in March, 1851, in response to their vigorous representations touching the "irritation" of their woodsmen constituents. See *Washington Republic* for March 18, 1851.

[30] Sabine, Loyalists of the Revolution, I, 18.

tions committed upon the public lands"[31] were turned over to the Commissioner of the General Land Office with the remark that

> The fact that many questions, intimately connected with the disposition of the public lands, are necessarily involved in the adoption of proper measures for the protection of the public property thereon, has induced the Secretary to commit the whole subject to your sound judgment and discretion as the public officer who from position and experience in such matters is most properly chargeable therewith.

In other words, the captain, having looked upon the assignment, and having hearkened to the bellowing of the bull, concluded that the lieutenant possessed enough "sound judgment and discretion" to manage the beast.

The Commissioner lost no time in taking active control of his new responsibility, issuing a circular to the timber agents in the field on January 28, 1854, *i. e.,* in little more than a week after the delegation of the authority. This circular contained extensive references to the Briggs case, to the 1821 opinion of Attorney General Wirt, and to other opinions in support of the right of the general government to the use of the Broad Arrow. It told the agents that the "main object sought by their appointment was the prevention of waste or trespass on the public lands and the destruction or carrying away of the public timber." In connection therewith, however, it stressed two things: actual settlers were not to be harassed, and no compounding with trespassers was to be entered into by the agents.[32] But the agents were warned against a pretense of bona fide settlement as a cloak to spoliation.

[31] General Land Office, Annual Report, 1877, p. 16. The writer made an effort to locate these documents in the archives of the Department of the Interior. With the exception of the letter of transmittal, however, they were not found.

[32] One of the bitterest grievances urged against the protective system instituted in 1850 was the alleged extortion of petty graft, and sometimes graft that was not so petty, by the government agents and marshals as the price of their inaction in the presence of felled timber. As to the truth of this charge, the writer cannot say. It is certain that it was alleged frequently and circumstantially. It is also certain that the government officers were human. See speeches of Sibley, Eastman, and Dodge referred to *supra;* also H. ex. doc. 115, 33 Cong. 1 sess., pp. 8-24. Dodge tells of a so-called "auction" by the marshal to the trespasser of the fruits of the trespass, with none but the "wolves, coons and badgers" for witnesses, a tale that is worthy of Smollett.

Instructions similar in tenor had been issued to the individual agents by the Secretary in his letters of appointment,[33] in which letters direct reference had also been made to the complaint received of the alleged arbitrary methods of the earlier agents, for which complaint, the writer stated, there was "reason to apprehend that it" was "not entirely without just cause."

A supplementary circular was issued by the Commissioner on the following fourth of March, principally amplificatory of the first, but with one feature at least that was new and significant—the agents were required to enter into bond in the sum of $20,000.

Between the dates of these two circulars another event occurred, which while not chronologically first in the series was probably actually so; as it is inconceivable that the premonitory thunderings that undoubtedly heralded its appearance did not reach the ears of Secretary McClelland long before his determination, on January 19, to trust to the Commissioner's "sound judgment and discretion." This was a House resolution—moved by Eastman—of January 30, calling upon the Secretary for complete information upon the whole matter of trespass prevention in the lake region pine lands: the methods employed, the authorization therefor, the alleged compounding of trespasses, etc. The Department's response to this request on the following June 27, constitutes the most complete bit of documentary evidence that we possess regarding this initial organized effort at protecting our forests nationally;[34] at making good on the circular of 1821. In the matter of downright interest it is likewise paramount, being much the same sort of document as the Upshur report of 1843, which chronicled the observations of Captain Hughes and the layings-about of Thistle.[35]

We learn from this document that there was no direct legislative authorization for the appointment of timber agents, a fact which had been taken advantage of, as we have seen, in Eastman's indignant "without the least authority of law." They were appointed of course in the light of the responsibility devolved upon the Secretary by virtue of the 1831 law plus the Briggs case interpretation

[33] 33 Cong. 1 sess., H. ex. doc. 115, pp. 23, 24.
[34] *Ibid.*
[35] 27 Cong. 3 sess., S. doc. 97.

thereof, a fact that was doubtless well-known to Mr. Eastman when he arose to "make a speech for Buncombe." We also learn from the document that there were five agents employed at the time of the document's issuance, and that this number was probably the maximum actively engaged at any time during the continuance of the system. They were paid four dollars per day and expenses, the said honorarium being derived, in the absence of any direct appropriation for the purpose, from the proceeds of the agencies—that is to say, from the amounts derived from the sales of seized lumber—*i. e.*, sales made either to third parties in the open market or to the parties found in possession upon it being pointed out to them that bona fide purchase was a *sine qua non* to retention—and from the sales of the despoiled lands to the trespassers. Such purchases were to cover the ownership of the property only, and were not to operate as a compounding of the unlawful appropriation. This was expressly forbidden.[36] In case the proceeds of such sales were not sufficient to cover the agent's salary, the deficiency was to be made up out of the judiciary fund.

That both the Secretary and the Commissioner were acutely aware that they were between the devil of law enforcement and the deep water of the unpopularity resulting therefrom, the document makes abundantly plain. There is an almost tearful ring in the Secretary's declaration that "it is no part of the policy of the department to oppress or in any manner to embarrass the citizens of the States in which depredations are committed." And when the Commissioner protests almost plaintively that he "cannot see how the laws as they stand can be more mildly executed," there is more than a hint of the awful spectre that haunted him—the fear of being considered an eater-out of the substance of those heroic "persons who feared no danger," the dread of the stigma of "irritator of woodsmen."

But what is far and away the supremely interesting feature of the document is contained in the reports made to the Commissioner by two of his field agents of their actual experiences and findings on the firing line of Adventure. Reading them, one for a moment gets behind the fog of sentimentality and confusion that the years

[36] That is to say it was in the Commissioner's instructions of January 28, 1854. It was not in the Secretary's letters of appointment issued earlier—at any rate not specifically.

have raised, and beholds a crystal-clear picture of a period truly great on the heroic side and truly gargantuan in its accompanying crudities. It is a good thing for Americans to look at this picture. The people who carried on the work of the world in the North Woods in the fifties were just people. They had a work to do that called for heroic endeavor, and that endeavor was not lacking. They were constrained, by inescapable and inexorable circumstances, circumstances of tradition, background, environment, and economic and governmental development, to do that work in a certain way that was not always a nice way. So, therefore, it came to pass. That it came to pass as it did was due to causes as certain as those that lead the streamlet into the river. The men of the fifties were the men of their day. Their day was a splendid day—and a rough one. And so, too, it came to pass that Agent Estes in Minnesota and Agent Isaac Willard in Michigan found such a plenty of stealing in their districts as to make it no mere figure of speech to say that the woods were full of it. They had but to go into the pineries to run full tilt into it. There was no escaping it. It was the day's work of the whole region. That they should have experienced no difficulty, therefore, in making extensive seizures of lumber and saw logs irregularly come by was due less to extraordinary abilities on their part than to the immensity of the abuse that confronted them. Estes found an "extensive lumber business carried on for years . . . supported by waste committed upon the public lands." "Trespassers almost innumerable" were found by Willard, who remarked that they had "commenced with the settlement of Northern Illinois and Wisconsin and increased with their growth and facilities for sending the proceeds to the interior of those States."

Agent Willard seems to have been of the Thistle type; only more so. His life was not only threatened by the "irritated" woodsmen but very seriously attempted. One of his deputies was murdered.[37] Three others lost their lives under suspicious circumstances. For a short time the "open revolt" of Mr. Eastman seemed to be by way of materializing.

After some general reconnoitering throughout his entire territory early in 1853, in the course of which he discovered the "trespasses

[37] These details are not mentioned by Willard in his report but are fully set forth in affidavits published in *The Detroit Free Press* for May 20, and June 8, 9, and 14, 1854.

innumerable" above referred to, Willard seems to have localized the most flagrant of the outlawry in the country about Manistee, on the east shore of Lake Michigan. That region was thereafter the theatre of his most conspicuous, and most exciting, activities.

Demonstrating early in the game that he was not capable of being bought off, as some of his predecessors appear to have been, by the payment of what was euphemistically termed "stumpage"—the said stumpage inuring not to the government but sinking without a trace into the pockets of the complaisant agentry—Willard speedily drew upon himself the concentrated "irritation" of a region that had for years, without interruption or restraint, been making its living by the very practices which the government, through him, now said were illegal. Naturally there was irritation. Naturally one of the Manistee gentlemen whose large scale rubber-fortying made him a particular object of the solicitude of Mr. Willard, "thought it hard" that Mr. Willard would not listen to reason[38]—just as had the Florida gentleman who had rubbed up against Thistle about a decade before. Or, to carry it back to the real beginning, just as had divers godly members of meeting in New Hampshire in the preceding century when they beheld their "substance being eaten out" by some timber agent—yclept in those days Surveyor-General of the King's Woods—who would not let them appropriate to their own use "substance" which was not legally theirs.

The irritation at Manistee displayed itself in various forms, all of them sufficiently truculent. Willard's original demands for a cessation of trespassing and a surrender of stolen lumber on hand met with flat refusal and open defiance. He was told that the woodsmen would continue to use public timber, government or no government.[39] When he seized lumber and placed it under guard it was either carried away by armed mobs or burned. When he tried to sell it he could find no buyers for the reason that

> no person residing at Chicago or Milwaukee, in consequence of the state of feeling that had been excited, would even make an offer without the consent of the person or persons from whose custody the property had been seized.

[38] *Ibid.*, June 8, 1854.
[39] *Ibid.*, June 9, 1854.

What Willard terms the "state of feeling" was kept at high tension by an intensive newspaper and forensic agitation, in the course of which "the Chicago *Tribune* went so far as to counsel resistance by force." And

> Meetings were held in the lumber regions attended by lumber merchants from Chicago in some instances, at which violent harangues were made, and resolutions adopted, the temper of which was well calculated to excite a feeling leading to the most dangerous consequences. Threats were openly made that none of the property seized should be removed from the place of seizure except by the original claimant or trespasser, and under his control; and that any attempt to remove the same on the part of the agent, or any third party to whom it might be sold by him, would be resisted by force and violence.

With the issue put so squarely up to him, Willard had no choice but to make good or quit. He determined accordingly to put the matter to the test and ascertain whether the laws could be enforced. To this end he arranged a sale at exceedingly attractive terms of a large quantity of seized lumber. In spite of armed resistance he succeeded in getting a small portion of it delivered to the purchaser; but the greater part was either burned or re-stolen. He thereupon determined to abandon further effort along the seize-and-sell line and to have recourse to what he terms "the halls of justice."

Procuring, accordingly, warrants for the arrest of the most turbulent of the Broad Arrow flouters, whom he had previously caused to be indicted in the federal court at Detroit, he repaired, with the marshal, to Manistee, and attempted to put the ring-leaders of this lumber rebellion under arrest. The success of this venture was even scanter than that attained by less militant methods. The majesty of the law was not conspicuously upheld on this Manistee expedition, but a veritable Donnybrook Fair of horse-play with the law was let loose, that must have been highly diverting to everyone but the two sorely harassed officers. Men were arrested only to be violently rescued by mobs of their adherents. Others were put on vessels for safe-keeping only to escape almost immediately by connivance of the crews. In plain language Willard and the Marshal were attempting to enforce the law in a region unanimously determined to have none of it. It is plain that they made a

gallant effort [40] under circumstances that must have been not merely discouraging but dangerous; only desisting when it became apparent that

it would be utterly impossible to make the arrest of persons in that section without assistance from others than those inhabiting the pineries, or those doing business with them in the lumber trade at the various ports of Illinois and Wisconsin on the lake as their mutual interest to continue the trespassing with impunity made escape or successful resistance quite certain.

It is equally plain that the honors of the conflict thus far were with the "damned thieves"; that it had been demonstrated that unless order could summon more militant resources than the majesty of the law in the abstract adventure would have to be left in possession of both field and baggage.

As it happened such a resource was conveniently at hand in the shape of the American naval force on the lakes, the U. S. S. Michigan. Application was made to the government for her aid in making arrests, which, being granted, was most effectively utilized as circumstances seemed to require. Her guns, her well-armed bluejackets, and her adequate "brig" constituted an argument that even the boisterous lawlessness of the Manistee camps understood. Some fifty additional indictments were secured at Detroit for trespass and obstruction of process, and a large number of arrests were made.[41] Several of the most violent objectors

[40] All the more credit is due to Willard for his behavior in the face, first, of attempted bribery, then of intimidation, because of the fact that he was a genuine Borderer, having gone to Michigan in the earliest pioneer days, and having been for years a lumberer himself. Possessing unquestionably a strong slant for the pioneer viewpoint, his forthright character could not be budged from what he conceived to be his duty. He left behind him a reputation for kindly humor, stubborn honesty, and utter fearlessness that is borne out not only by his behavior in his difficult office but by his appearance. The writer has been so fortunate as to unearth an old steel engraving which shows Willard to have been not only a man of powerful physique but of extraordinarily striking physiognomy—the face of a somewhat burly Cromwell. His family record this side the Atlantic is significant in connection with the forest moulding of the Briton into the American—Massachusetts in the early 1600s; then northern Vermont; then western New York; then Michigan in the twenties.

[41] *Oct. 1, 1853* (*Sat.*).

. . . At 6.30 came to off Manistee with the port anchor. . . .

At 11.40 the Barge returned from shore, with the Timber Agent, and two deputy marshals, having in custody the following named prisoners, viz.,

to the "eating out of substance," however, avoided arrest by taking to the remote timber beyond the reach of the Michigan's posses. But enough were gathered in to make it, all in all, quite a field day for Order in general and for the navy as Order's instrument in particular. Thus was it clearly demonstrated, after thirty years, that the use of the navy along the lines indicated in that law of 1822 which has fizzled so signally in the region it was designed to protect, was entirely possible and eminently practical—given, up above, determination, and a contempt for political consequences.

While it cannot be said that the arrests and indictments were adequately followed up in view of the gravity of the Manistee outrages, they were at least followed up with a fair degree of promptness and with the greatest display of vigor that had been made in forest law enforcement in America up to that time. Mr. Willard's Manistee campaigns took place in the summer and early autumn of 1853. In the summer of the following year the indicted persons were placed on trial in the federal court at Detroit, and despite a determined and apparently well-financed defence,[42] a majority of them was convicted. The punishments handed out—small fines and jail sentences ranging from one day to one year—seem rather disproportionate to armed rebellion resulting in the death of federal officers; but probably, in view of all the circumstances, they were the utmost that could have been expected at the time.[43] In any event they mark a really impressive advance for Order. Order that

---

John D. Colson, Edward Secoy, Owen Finan, Erastus Potter, and Jas. B. Cooper. Hove up the anchor and stood to the S. and E.

Oct. 15, 1853 (Sat.).

. . . At 7.30 sent the barge ashore with Mr. Willard and assistants, laying off and on abreast of Black River. At 8 Barge returned. . . . At 8.30 sent the Barge on shore with the marshals. At 9 inspected the crew at quarters. At 9.15 the barge returned, bringing Capt. Marcus as prisoner—sent the Barge again on Shore. . . . Laying off and on off Muskeegan. . . . At 10 let go the port anchor in 6 faths. water, the Barge returned bringing 8 prisoners from Shore. At 10.30 sent the Barge again on Shore.—Extracts from log of U. S. S. Michigan, Oct., 1853.

[42] Also, it was alleged, an unscrupulous defence which attempted to corrupt United States court officials and did succeed in corrupting a deputy marshal. An attempt to entrap witnesses into false statements in a hotel room failed because the feet of the eavesdropper planted under the bed were a trifle too large for their hiding place.—*Detroit Free Press,* June 14, 1854.

[43] One year was the maximum penalty provided for by the 1831 act. Apparently no attempt was made to proceed against any of the "rebels" on any graver grounds than spoliation.

was purely American, had invaded the stronghold where Adventure had ruled dictatorially for decades, had there "irritated" Adventure most ruthlessly, and, for the time being, had got away with it. The fact that the success was rather a momentary one, that all the ground taken was not held, cannot detract from the essential bigness of the event. It did not react upon a certain type of mind with the smashing impressiveness of the squelching of the Whiskey Rebellion or the quashing of Nullification, but it verged in that direction appreciably.

To visualize the extent of this verging it is necessary to look again at the conflict between Order and Adventure as it had existed in the early times—the times when the illegal utilization of a vast virgin resource was helping tremendously in the evolvement of a new people by creating, first, economic independence with an accompanying spirit of enterprise and daring; and second, spiritual independence as a natural result of the genius and ability called forth by the first. Or, to put it another way, the times when a restriction that was basically just was helping to change, by reason of its grossly inept application, a colonial mind into a national mind.

Now right at this point certain of the aspects of those far-away days will have a strangely familiar look. "The frequent quarrels in the woods and at the saw mill," [44] of which we read, over "the King's claims to the pines which had been growing there for centuries, so straight and tall, without the King's aid or permission" [45] between the surveyor-general on the one hand, and, on the other, "a hardy race of lumberers who could not understand the King's claim to the trees which they had been so freely cutting down as their own" [45] might go, with a negligible amount of changing, for the brawlings and bellowings around Manistee and the clash of viewpoints as between Willard and the "persons who fear no danger." And just as Willard and the marshal met with discomfiture until they returned with the Michigan's *force majeure,* so, in the olden days, do we learn that "the loggers and sawyers whipped the deputies of the surveyor-general so often and so severely that the term *swamp-law* was quite as significant a phrase as *lynch-law* in our own time." [46] In the woods of New Hampshire the "irritated"

[44] Sabine, Loyalists of the American Revolution, I, 18.
[45] Greene, Historical view of the American Revolution, 42.
[46] Sabine, I, 24.

gentry used to have a pleasant way of burying the surveyor's deputies alive. At Manistee they made Willard's deputy walk the plank.[47] Manistee, in fine, was simply the old struggle moved a thousand miles to the westward.[48] Just as New Hampshire was the border in 1754, Michigan was a hundred years later. Unlovely, both of them; crude, brutal, and ruthless, both of them; as Adventure is ever apt to be when it has things too unrestrainedly its own way.

It is needless to say more by way of demonstrating the striking forest parallel of 1754 in New Hampshire and 1854 in the lake region. But it is highly essential that one element of the situation that was not parallel, be well rubbed in before we pass on from this phase of our subject. Whereas Order hardly so much as laid its hands on Adventure's coat tails in 1754; in 1854, per Isaac Willard, it obtained a firm, albeit a brief, grasp upon the slack of the breeches. In 1754 all America stood at the side-lines vociferously cheering Adventure on and howling Order, the hated alien, the "eater-out of substance," as vociferously down. The struggle between the two forces was practically its one subject of absorbing interest. But a hundred years later, and a great deal of water had gone over the dam. There was no such thing then as side-line unanimity. Adventure had the best of it in the cheering, to be sure; but there was a respectable group of adherents of an Order that was not alien, and that was far more powerful than it seemed; an Order, moreover, that was the focal point about which was slowly crystallizing a thought whose might, a decade later, was destined to decree that that scheme of government formulated by the framers of the Constitution should not go to wrack in the tempests of civil warfare.

In a century, in short, both Adventure and Order had moved west. Both had grown, but Order's growth had been proportionately greater. Still overbulked, Order was no longer dwarfed.

But despite that increased strength and stature, time enough had not run by 1854, "experience and necessity" enough had not been acquired, for the big gain pushed through by Willard's uncompromisingly stubborn determination to be permanent. Some of the

[47] *Detroit Free Press,* June 9, 1854.

[48] The exemplification of this by Willard's family history has already been noted. Eastman's personal career likewise cross-sections it. Originating in Maine—where his forbears had probably been "ripe for open revolt" in the days of the surveyor-general—he gravitated west by the timber land route: first Western New York; then Wisconsin.

ground taken had to be given up. The advance was too " advanced " for the time, and was, in consequence, not sufficiently " dug in " to withstand the furious counter attack that almost immediately materialized.

The details of that counter attack and of the success thereof, it is needless to narrate. The mention of but a few significant circumstances will serve to picture it with sufficient graphicness.

Three months after Willard, with the Michigan standing by, demonstrated to the amazed denizens of the Manistee pineries that that faraway, almost mythical thing theretofore vaguely known as " the gov'ment " was a thing with a kick to it, that indignant resolution of Eastman appeared. It may safely be assumed, I think, that Mr. Eastman did not take this action casually, or merely on the spur of some momentary whim. It is at least possible that both Mr. Eastman and all other legislators from the region of the pine lands had occasion to note, in the weeks following Willard's high-handed " outrages " in the autumn of 1853, a sort of general angry tone to the universe. It is conceivable that their mail gained greatly in bulk and amazingly in vigor, and that they chanced to meet many gentlemen and delegations of gentlemen who seemed to be aboil with fury, and who, when they spoke, used talk with the bark on.

We may be reasonably assured that some faint hints of this seething-up of human passion seeped into the sanctums of the Secretary of the Interior and that Commissioner of his, to whose " sound judgment and discretion " he had confided the task of making the nation's forests stay put. It may be that they penetrated into the inner privatenesses of even more august personages. It may be that they had something to do with that very evident harassment of soul that was given expression in the Commissioner's plaintive declaration of his inability to " see how the laws as they stand can be more mildly executed." If they hadn't, what had? Something, certainly.

Something just as certainly had to be done. The political barometer told the Pierce administration that the northwestern gale that began to howl with Willard and that grew to hurricane proportions with the Detroit trials was an affair calling for some seamanship—perhaps for a bit of jettisoning. Under the circumstances it was only natural that the gentleman who had been called to the cabinet " to satisfy the free soilers, the Northwest and the friends

of Cass "[49] should be looked to for the riding out of the Northwestern blow. It was perhaps just as natural that that gentleman, looking about for a Jonah to cast overboard, the while the angry pointednesses of his home folks rang in his ears, should select for sacrificial honors the man to whose "sound judgment and discretion" he had turned over the wheel when the sea first began to misbehave.

The simple truth was that the lumber states were mad through; "irritated" to such an extent that the party in power had to do something with an impressive look to it in order to give satisfactory evidence of its contrition. The Secretary had to make good on "satisfying the Northwest"; and that section was in a mood to take a deal of satisfying, in view of the fact that the Secretary himself had been personally responsible for the unleashing of the unreasonable Mr. Willard. Willard was his own appointee. Under Willard's instructions his own name appeared.

Now John Wilson, the Commissioner of the General Land Office, was not of the dominant party. He was a Whig who had been continued in office partly, it is said, because of "long and efficient service," partly because three Democratic senators—one of whom, be it noted, was Cass, of Michigan—were his loyal friends.[50] He had clung on, moreover, in spite of the fact that a prominent Hoosier Democrat had strongly coveted his place.

Here was presented, of course, an absolutely made-to-order opportunity for political placation—two birds with one stone; several states with one decapitation. Mr. Wilson's head would "satisfy" the Northwest and mollify Indiana. Not of the party anyhow, his expungment would hurt no party feelings. Under the circumstances Mr. Wilson's political annihilation was as certain as sunrise. True, he was a "friend of Cass"; but that was a circumstance that could be attended to otherwise, as we shall see.

The thing was done artistically. First, there was laid down a barrage of rumor. Rumor for weeks had it that Wilson had been found to be infected with Know Nothingism and that he would have to go.[51] Then came the formal announcement that

[49] Secretary of the Interior McClelland, of Michigan. See Nichols, The Democratic machine, 1850-1854, p. 186.

[50] Nichols, p. 191.

[51] *Washington Sentinel*, June 28 1855.

J. Wilson, Esqr., was on Wednesday last removed by the President from the office of Commissioner of the General Land Office, a post which he has with signal ability filled for several years.[52]

Concurrently came the declaration of the administration mouthpiece that the removal was made on political grounds;[53] followed, some two weeks later, by the further declaration that the said removal was a good thing, with statistics to prove it.[54] More self-righteous comment about the removal of "Wilson, the Know Nothing" came a few days later,[55] fortified with a quotation from another journal[56] to the effect that

The Department of the Interior has been the cause of considerable dissatisfaction in several sections of the Union since the beginning of the Administration; and it is to be hoped that the successor of the obnoxious Wilson will be a man of sufficient nationality to remove all causes of discontent, etc., etc.

The editor's reference to "sufficient nationality" is a little hard to understand, in view of the fact that what got Wilson into trouble was, if anything, an excess of that very quality. The thing Isaac Willard started around Manistee was an idea of nationality a half century ahead of its time. Perhaps the editor meant rationality.

Another week, and the mouth-piece announced the appointment of Thomas A. Hendricks, of Indiana.[57] The thing was done—all except softening the blow. That was attended to very quietly and without journalistic fanfare, it being rather obscurely announced in a departmental report issued the following December, a report read, it is safe to say, by precious few of those who had avidly devoured the disgrace of the "obnoxious Wilson," that "the former Commissioner of the Land Office"—name omitted—had been commissioned by the Secretary to assist the Indian officials in certain important tribal negotiations in the West.[58] Thus was the operation completed and everyone made happy—the Northwest "satisfied"; Hoosierdom made to purr; the burnt offering quietly

[52] *National Intelligencer,* June 30, 1855.
[53] *Daily Union,* June 28, 1855.
[54] *Ibid.,* July 19, 1855.
[55] *Ibid.,* July 21, 1855.
[56] *Wheeling Argus.*
[57] *Daily Union,* August 3, 1855.
[58] Secretary of the Interior, Annual Report, 1855, pp. 135, 322.

whisked out of the flames and witch hazel applied to its blisters; Cass squared.

But it is perhaps not strictly correct to say that the aforementioned manœuvers completed the operation. Something more had to be done to "satisfy the Northwest" that there would be no recurrence of Willardism. It was. In the same month in which unostentatious announcement was made that the "obnoxious Know Nothing, Wilson," had been given a back door mollification, his successor in the commissionership sent out to all registers and receivers of land offices a circular which began with this significant statement:

The Secretary of the Interior has concluded to change the present system of timber agencies, and to devolve the duties connected therewith upon the officers of the local land districts.[59]

There were to be no more Ike Willards. The woodsmen were told in language plain enough for any save the most hopelessly obtuse that thereafter, not only were they not to be "irritated," but that matters were to be so arranged that they could not be. Timber protection was to be made an ex officio duty of a set of officers with other duties to perform. It was to bring those officers no added compensation for the vast and poignant burden of grief with which it was inextricably bound up. It put those officers—assuming that they enforced it rigorously and even-handedly—hopelessly "in bad" with 99 per cent of their friends, neighbors, and relatives, whose good will was by no means valueless in the matter of their continued official existences. But for this social, political, and economic self-immolation there was to be no reward. "By this direction, therefore," continued the circular of the successor of the "obnoxious Wilson,"

you will, upon the receipt of these instructions, take charge of the timber business within the limits of your land district, as a part of the general duties of your office; and it is accordingly hereby assigned to you as such, with the understanding that, hereafter, it is to be considered and held as a proper incident to, and in fact a part of, your general duties, covered and satisfied by the salary which the law provides for your respective offices.

[59] Issued December 24, 1855. Printed in full in Hough, Report upon forestry, I, pp. 12-13n.

Which was a rather large order. Isaac Willard, the bluff, forthright, and incorruptible, the single-track-minded obeyer of orders though the heavens might fall, whose vocabulary lacked the words expediency, quit, and inadvisable, as well as the verb to wink when used in a collusive sense, was successful as an "eater out of substance"; somewhat unexpectedly and disappointingly so to his sponsors the writer is inclined to suspect. But that was all Isaac Willard had to do, and, furthermore, he was paid for doing it. But would even an Isaac Willard be exactly avid to tackle hopeless tribulation when he had other, and infinitely less acrimonious, duties to perform, and when such action enlarged his honorarium by not one cent?

It is true that the new instructions authorized the officers to whom the responsibility for timber protection had been delegated to delegate their own authority in that connection to special deputies at so much per diem and per mile. But that delegation must not be made except upon "pressing emergency," and when made the delegating official must "report the fact instanter, and the necessity for it." Where the emergency was not "pressing" the local officers were to "refer the facts to this office for consideration and await instruction."

The word "instanter" is a very discouraging sort of word. It has a grimness about it, a sort of at-your-peril and watch-your-step implication well calculated to give pause to a set of men already hesitant; a set of men who knew—as well as they knew the unctuous side of their daily bread—certain hard and inescapable facts. They knew: First, that the activities of Mr. Willard had kicked up such a storm of resentment among the "persons who fear no danger" as to create a distinct view-with-alarm state of mind in political high commands; second, that the aforesaid "persons" were not exactly unrepresented at, and in, the seats of the mighty; third, that Mr. Wilson's "mild" application of the law of the land to those gentlemen had redounded to Mr. Wilson's grief; fourth, and ergo, that it was distinctly foolish for subordinates to rush in where superiors so very patently feared to tread.

There was an "idea" wrapped up in that circular that went out from the General Land Office on Christmas Even, 1855, and the persons at whose "rationality" it was aimed pretty generally "got" it—as we shall see by and by. The action of government in project-

ing that circular, when considered in the light of the circumstances which preceded it and the results that flowed from it, will have a familiar glint to those readers who during the recent unpleasantness were privileged to serve as enlisted men. Few of them but will preserve piquant memories of that roaring type of top sergeant that knows to a nicety when to be keen-eyed and when astigmatic; whose after-taps descents are so emphatically devoid of stealth that few are ever caught; whose bellowings at formation fill the rookie with terror but are quietly—and gratefully—comprehended by the veteran on the theory of verbum sap. "Let me ketch," he will truculently bawl; an admonition which, to the sophisticated, simply means "if you must do it, do it—but don't get caught."

All in all one is rather prepared to read in the new Commissioner's first report that "depredations, hitherto committed to a deplorable extent, have almost entirely ceased,"[60] however much he may be inclined to wonder why they should have. Nor is he surprised to learn from a later outgiving that "The efficiency of this system[61] is shown in the abatement of any serious complaint and the general arrest of the evil."[62]

Why should there have been any complaint? Had not the "obnoxious Wilson" been fired? Had not Willardism been done away with? Had not "irritation" been tabooed? "Persons who fear no danger" are not unreasonable.

The "efficiency of the system" was to be demonstrated yet further. For a score of years there was destined to be a dearth of "any serious complaint." Throughout the sixties and the seventies a profound peace brooded over the pineries, broken by no irruption of nosey agents appointed "without the least authority of law"; menaced by no frowning muzzles of naval cannon.

This does not mean that the pineries had either gone out of business or changed their ways. Willard's old adversaries had

[60] General Land Office, Annual Report, 1856, p. 31. Rather curiously, as the reader will recall, this was just three years after Smith's supersanguine declaration to the Secretary of the Navy regarding affairs on the naval reservations.

[61] That is, the one instituted under the 1855 circular.

[62] General Land Office, Annual Report, 1857, p. 24; 1858, p. 34. These documents also throw light upon the references to naval timber possibilities on the Pacific made in the Navy Department Report for 1856. Land Office representatives on Puget Sound reported vast quantities of wonderfully fine and wonderfully accessible naval timber in that region.

neither moved away nor got religion. An inexorable economic law prevented that. The Central West was still far from built. Lumber requirements were not shrinking but were growing more rapidly than before. The possibilities of the resultant "occasion to be profited by," far from being exhausted, were only beginning to be realized. The doubling of Chicago's lumber trade in 1848 as a result of the completion in that year of the Michigan Canal.[63] looked impressive at the time; but it only recorded a ripple, not a high tide. In 1848 that had scarcely begun.

War had ceased in the pineries but not work. There more furiously than ever were the "axes lifted up upon the thick trees." In constantly growing numbers did the tall pines fall upon the northern snows, and go roaring down the spring floods to an accompaniment of ribald jest and old chanson. The Anglo-Saxon was surging west. Lumber must be had that he might possess the land. It was. In the north woods the spirit of Paul Bunyan went marching on as the Homeric labor of the fight against the "dark, brute powers of nature" solaced its leisure with Homeric legend that went back to the "Pied Cowe"—if not to the days of the "forest-felling kings." [64]

[63] Cong. Globe, 32 Cong. 1 sess., Appendix, p. 473.

[64] The super-Munchausenistic exploits of a fabled Cid among lumber jacks named Paul Bunyan have been recounted around lumber camp stoves for no one knows how many years. Some say these yarns were peddled as far back as Broad Arrow days. If so they probably served as a counter-irritant among the "irritated woodsmen." The fact that eight characters—"the seven axemen and the little cook boy"—figure frequently in the stories, and that "eight Danes" started American lumbering in 1634, may be nothing but a coincidence. The name, Paul Bunyan, has been pretty definitely traced to a French-Canadian logger named Paul Bunyon who figured in the Papinneau rebellion in Canada in 1838. But as to the antiquity of the yarns themselves, who shall say? There were yarns at the driving of the Cedars of Lebanon just as certainly as there were yarns in the fo'c's'le of the Ark.

CHAPTER VII

THE GROWTH OF ORDER

Now of course all this, one way you look at it—but that the most obvious and superficial way—was one most awful bit of hypocrisy, quite of a piece with that colonial procedure which had officially and legislatively bent its brows and cleared its throat at tree thievery, the while it beamed upon it and even profited by it unofficially and privately. Here was a nation literally aroar with such a development as humankind had not theretofore dreamed of, a development which demanded wood as imperiously and as incessantly as the white elephant of the ancient ditty trumpeted for hay. And yet instead of providing for a logical, orderly, and straightforward method of feeding out its abundant forest resources to meet its forest product needs, that nation hedged and pretended and equivocated, and prated about the "efficiency of a system" that was efficient only as a piece of glorified top-sergeantry. It enforced upon itself and perpetuated a system that compelled it to play the thief. It bemoaned the thievery, admitting it to be "committed to a deplorable extent," and then brilliantly cured the situation by looking the other way. It declared, with all the vehemence of the lady who protested too much, that it would never compromise. And then it compromised. It carried its back-handed, stern-end-foremost muddling to such an absurd extreme that it almost achieved unto common sense from the very extravagance of its flounderings, by going the long way around. And yet—

Inconsistency, hypocrisy—all that? Much of it, yes; but all of it, by no means. The situation out of which it developed was complicated, to say the least, and that with many other and more hard-to-handle things than trees and saw logs. Human nature, for instance, which, let us say again, is a kittle substance, not easy to "cabin, crib, and confine." And it is well to ponder again upon Dr. Schoepf's remarks about "experience and necessity." And eke upon Dr. McHenry's dictum as to "profiting by occasions." And finally there must be borne in mind this great and towering fact—

that America was the most stupendous experiment in Democracy, the greatest unleasing of pure Adventure, of stark individualism that had ever been attempted on this planet. To direct the new and terrific force that flared up out of the blending of Anglo-Saxon Adventure and American "spaciousness" was a task calling for top-sergeantry of the most consummate sort, for infinite "fortitude and delicacy," for a sense of when to command and when to ca canny little short of inspired.

It would be hard if not impossible to estimate the worth to America and to mankind of the gigantic unleashing of Adventure, that vast unfetterment of the human spirit, that became inevitable with the planting on America's eastern rim of the breed of Oliver Cromwell and Sir Henry Washington, of Worcester siege fame. Hard because it could not be expressed in the language of the financial statement or the census report. It touches too many imponderable things for that.

Sugar coat it in patriotic platitude as we will, the hard fact remains that the story of the Anglo-Saxon in America, when reduced to its simplest terms, is nothing but the story of a raging spirit of adventure with an uncontrollable westward urge, a spirit so intoxicated by the spaciousness amid which it found itself that it had scant patience with law and authority and custom but insisted on hewing its way westward in its own sweet fashion. A spirit of Adventure, in other words, so little restrained by Order that Order in truth dared not attempt to control too rigidly. That, after all, is all that our Revolution means—a too violent attempt at bridling.

That this wild freedom, with its fierce intolerance of restraint, stood the supreme test of spaciousness must, in the opinion of the writer, be put down as the greatest achievement of the Anglo-Saxon. Spaciousness did cause him to run somewhat amuck. He was far from being, throughout his progress from Jamestown to the Pacific, always sweetly reasonable and just. His is a strong and virile record, but it is neither snow-white nor sweet-scented. But spaciousness did not degenerate him into squaw-manism. It did not cause him to surrender to the forest. The forest surrendered to him. With all his wildness, with all his crudeness, with all his "inexhaustibility" inspired wastrelism, he was, nevertheless, always and everywhere the sure waybreaker for that very Order whose restraining hand he shook off so violently.

Strangely contradictory? Only apparently so. The truth is that beneath the rude, sometimes uncouth, exterior of that wild spirit of Anglo-Saxon Adventure there was ever a strong, if ofttimes invisible, element of Order, a saving grace that made squawmanism impossible; that flared out when the need arose in no uncertain fashion, putting crime and license, emboldened by the freedom of the moment, into their proper places. Go back as far as you will, to the "Pied Cowe" even, and you will find here and there, glowing forth when emergency called for it, that same grim sense of Order that, in the easy informality of '49 days, when scoundrelism grew overbold, spoke out through William Coleman and his Vigilantes; loading the gallows tree with a grim fruitage.[1]

Here was no contradiction if the truth be told. Here was abnormal times when the ordinary restraints of Order must be suspended—but not by any means abandoned—by men with a new world to make in a terribly scant measure of time. The westering Anglo-Saxon facing such a task could not be cramped and hindered by verbotenism. But let no man think that he had ever abandoned Order. Always was Order in his inmost heart and mind. Always was he dreaming and visioning ever higher and finer ideals of Order, however rough and boisterous his outward seeming often was. How could it be otherwise? Was not his the breed of "the right good improver, discerner, doer and worker in every kind"? That breed could not get away from Order if it would. That breed is Order—in the best sense that the term has ever been known in this world.

So that what may seem at first glance to have been a repudiation of Order, an abject surrender to Adventure, in the events that followed closely after the brief era of Willardism, was not that by a very considerable margin. It was merely an easing-up by Order, of a laying-hold upon Adventure that proved to be altogether too strenuous for the times. The time was not ripe for Willardism by

[1] It is somewhat more than interesting in this connection to note that Coleman had been a lumberman in Wisconsin in the early forties, years before the need for him arose in the Californian "Terror." In those days there were no Ike Willards in the Wisconsin pineries, and the Borderers on the Menominee and St. Croix "made" just as "bold" as had their forbears on the Dismal more than a century before. It is not unlikely that this north woods experience among the "damned thieves," the "persons who feared no danger," helped Coleman to "make bold" in California.

a decade or so. To have persisted in it would have meant disaster—disaster, it might easily have been, for more than mere political parties. The time, it was seen, must be bided. Adventure must be given a very slack rein for a while yet, not only because Adventure was still the supremely fit instrument for the "dark brute Powers of Nature" but because too much bridle and bit might well spell smash-up for Order and Adventure alike.

In brief, both politics and common sense recognized the obvious. If, taking into consideration the hard facts of the times, the only way to progress was by floundering, flounder would have to be the word. Somewhat ridiculous and humiliating, perhaps, but needs must when one is driven by the devils of national tradition. We had, among other traditions, one of passionate resistance to the "eating out of substance." Were we to try the same tactics too violently upon our own people it were like to prove a disastrous pastime.

But we could at least save our face. And we did. We uttered a stern-lip reprehension of "damned thievery" in the shape of the Circular of 1855. The ideal top-sergeant frown was preserved unbroken. And the Central West got its lumber. And certain of the "persons who feared no danger" waxed rich—even as they had in the old, old days of the surveyor-general.

But let us have a look at the working of Mr. Hendricks' "efficient system" as reflected in the reports of those charged with its administration—in the printed lines thereof and between the same. And as we set about this, let us fix in our minds certain facts upon the subject of "compromise," to which we had occasion to refer somewhat sarcastically a while back in the course of our remarks upon top-sergeantry.

The mitigation at discretion of fines and penalties incurred thereunder was specifically provided for, it will be recalled, in the act of 1831.[2] But Mr. Hendricks' yuletide ukase, far from echoing such

[2] Section 3 of the act provided for the institution and prosecution of all legal action for violations of the statute under direction of the Secretary of the Navy; for a 50-50 division of fines and forfeitures recovered under the act between the informer or captor and the navy pension fund; and for the mitigation at discretion by the commissioners of said fund of all fines, penalties, and forfeitures incurred under the act. The Secretary of the Navy succeeded to the powers of the commissioners of this fund by virtue of the act of July 10, 1832 (4 Stat. L., 572). Under the revision of the statutes completed in 1878, Section 3 became R. S. 4751.

a system, hurled excommunication at it. In the most direct and mandatory language it declared that there was to be no compounding or compromising with offenders by the registers and receivers;[3] that there was no authority for such action; and that all violators of the law must be prosecuted by the duly constituted law officers.

Now of course the real effect of this 1855 circular was just this—that if anything was going to be done about timber trespass on the general public domain, it was going to be done at the General Land Office in Washington, and not in the field by the local officers, whom the circular effectually reduced, so far as timber protection was concerned, to the status of mere messenger boys. "Initiate action at your peril," it said in effect. "Tell us and we'll decide."

It was undeniably a good thing to remove absolutely the possibility of "stumpage" collections by remote local men with none but the "wolves, coons, and badgers" to see the "compromise." The back of human frailty has a last-straw point just as certainly as has the camel's hump. But do not think for one moment that all compromising ceased. As early as 1860, it would appear, compromises were entered into with the full approbation of the Secretary of the Interior,[4] a fact especially significant in view of the amplification of the trespass section of the 1831 law by the act of March 3, 1859 (11 Stat. L., 408).[5] And two years later the same officer took issue with the no-compromise policy, refusing "to concur . . . in the opinion that no settlement is to be made with trespassers," and opining that if the government could get the price of the land out of the stolen timber there was nothing left to worry about.[6] But no word as to a new circular frankly stating that position.

With the camel's head thus eased into the tent, the insertion of the entire brute was only a matter of time and manipulation. Until May 2, 1877, the circular of 1855 remained the basic law of timber affairs conduct for the local officers. During all that time they

[3] "Under no circumstances will you compound or compromise."

[4] General Land Office, Annual Report, 1877, p. 18.

[5] The 1831 act covered naval reservations and the general public domain. The 1859 law extended protection to lands "reserved or purchased for military and other purposes."

[6] General Land Office, Annual Report, 1862, p. 20; 1877, p. 18.

were enjoined to govern themselves in accordance with its provisions, including the one forbidding compromise. That they did so with considerable flexibility of interpretation, but with the full approval of their superiors, would seem to be unquestioned.[7] The utterances of those superiors make this abundantly plain.

Thus, the deprecation by one of them, in 1864, of any such thing as a pursuit of offenders "in a vindictive spirit," coupled with an assertion that the exaction of a "liberal stumpage," or a "reasonable tariff," or a "revenue" had resulted "in mitigating the evil" and enriching the Treasury to the magnificent extent of "over ten thousand dollars."[8]

Willardism as a policy, said the same gentleman, in effect, had failed; "compromise" had succeeded gloriously. Further, he decleared that

Experience has taught us that when community interests conflict with law, and public opinion is in conflict with its enforcement it becomes virtually inoperative.[9]

Nevertheless, he declared that the "evil" was being suppressed. No new legislation was necessary. On the contrary—

The present laws, *discreetly administered,*[10] are ample for protection, unless Congress should deem proper by express enactment to give direct sanction to the authority of the Commissioner, now regarded by this office as legitimately incidental, of relaxing or enforcing the penalty imposed by the act of March 2, 1831, on such conditions as shall seem meet to him in all cases involving the spoliation of public timber.[11]

And still later, pointing out the un-jibeability of the 1831 law and the hard, practical facts of pioneer existence—to say nothing, one may well suspect, of putting in a shrewd lick for the general theory of compromise—he said,

No discretion is given, no conditional provision made, whereby it can be adapted to any exigency beyond its letter, the Executive

[7] As to which, see Wells v. Nickles, 104 U. S. 444, in which the matter of "compromise" is very thoroughly and clearly reviewed by the Supreme Court.

[8] General Land Office, Annual Report, 1877, p. 19.

[9] *Ibid.*, 1865, p. 26.

[10] The italics are mine.

[11] General Land Office, Annual Report, 1865, pp. 26-27.

being stopped at the threshold. The timber belongs to the United States, and no authority to sell or to permit anyone to cut or use it exists. Hence the difficulty—either a refusal to relieve the pressing wants of settlers or permission to violate the law. In order, therefore, to meet the exigencies of the case, this office proposed a *compromise*,[12] substituting a uniform tariff of fees, in lieu of selling the timber seized, mitigating thereby the penalty in consideration of the peculiar local necessities of the settlers.

The arrangement proposed rests on the principle of treating the parties as offenders under extenuating circumstances, and releasing them on conditions ample to meet the exactions of justice—a principle applicable as well *before*[13] as *after*[13] conviction. Hence, while the law is not evaded, nor its violation countenanced,[13] the wants of new settlements are gratified so far as consistent with sound policy and the necessity of the case.[14]

This attitude of complete belief in compromise lasted until well into the seventies. Commissioner Wilson[15] bestowed his benediction upon it in 1866, and in the course thereof gave expression to a general point of view of the day by saying that timber protection was an "incident to the land administration."[16] That is to say, the forest was merely a casual detail. A successor extolled it as a source of revenue and a means of avoiding "vindictiveness" toward citizens.[17] Compromise upon the basis of "a reasonable stumpage according to the market value of the timber cut" had, in short, by 1876 become so emphatically the regular and customary thing that the local officers would appear to have been engaging in it without question. In many cases, indeed, the taking of timber seems to have been arranged openly in previous agreements between the lumbermen and the General Land Office officers.[18] Thus had the Anglo-Saxon, by sheer awkwardness, attained the elements of logical method as regards the efficient and orderly utilization of national forests. This is not to say, of course, that this system of permissive cuttings, as evolved after so many years of floundering and silly hypocrisy, was anything like ideal. It was wide open to skulduggery in the shape of favoritism and *quid-pro-quo* money

[12] The italics are in the original text.
[13] Ah, Sergeant, Sergeant!
[14] General Land Office, Annual Report, 1865, p. 27.
[15] Joseph S. Wilson, a brother of John, "the obnoxious."
[16] General Land Office, Annual Report, 1866, p. 33.
[17] *Ibid.*, 1872, pp. 26, 27; 1873, p. 13.
[18] *Ibid.*, 1877, pp. 18, 19.

euphemized as "stumpage." What it is desired to point out is simply the fact that permissive cutting under governmental supervision, with government retaining the title to the land for the growing of another forest, is necessarily the basis for any system of utilization of a nation's timber resources predicated upon an idea of orderly conservation rather than upon one of "get while the getting's good."

But for the America of that period to have faced this fact—a fact which to us of to-day is tremendous in its obviousness—with frankness and common-sense directness; to have instituted that "systematic forest economy," the lack of which had caused Dr. Schoepf to wag his orderly Prussian head so ominously: that, of course, would have been utterly out of the question. To have provided at a stroke for utilization under the law, and for an abolishment of utilization in direct contravention thereof, might seem to have been of the very essence of simplicity. But it wasn't. You can't make over a race flaming with the spirit of adventure and furiously impatient of restraint into a docile citizenry accepting the red tape of bureaucracy with cow-like resignation—assuming that you would want to do such a thing. That is, you can't do it overnight. First you have to show them that "inexhaustibility" is something of an exaggeration; then that there is nothing necessarily tyrannical and substance-devouring in an idea of national forests and a careful administration of the same. And in the America of the sixties and seventies, as we know, "everybody" knew that the forests were "inexhaustible," and that nation's forests sounded rather uncomfortably like those King's Forests, in which so much "substance had been eaten out." And finally, putting a clove hitch into the tail of the British lion was in those days perhaps the most popular and applause-producing item in the political gentleman's bag of tricks. Hence the tumble-bug floundering. Directness, straightforward recognition of facts, might not have brought on "open revolt," but it is very much of a question if it would have produced any long-run good.

During all those years from the "Pied Cowe" to the Irish Apothecary, and from Thistle to Willard, and on through the era of "compromise," the Anglo-Saxon was moving west—which is to say Adventure was moving west and Order was following closely after. The border of yesterday became the "settlements" of

to-day; the "back East" of to-morrow. Where Order came, Order stayed—and grew. And with the shrinking of the areas of potential frontier and the growth of the extent of settled land, Order came to have a significance that ever grew more national, less sectional. Insensibly, imperceptibly, gradually, yet surely, this great change altered the American viewpoint, undermining the foundations of the sacro-sanctity of borderism, diluting the potency of Hartford Conventionism and Nullification. The Civil War gave the *coup de grace* to that spirit of sectionalism that tolerated national authority, that followed it with a mental reservation. More than the Confederacy passed at Appomattox. Nothing was said about Manistee upon that historic occasion, probably nothing was thought about Manistee; but when General Lee walked out of the McLean house on that April day in 1865, not only Manistee, but what Manistee stood for, was history. Though few realized it, the Broad Arrow had definitely arrived.

Not until the decade of the seventies, however, does this new trend begin to show itself pronouncedly in forest affairs. Appropriately enough, it was in the first year of that decade that the bequest of the younger Michaux became available. Two years later came a significant event, a sort of first whisper that all was not well with that "efficient system" of "compromise," the praises of which had been consistently sung since Hendricks succeeded the "obnoxious Wilson" in 1855. This event was an unsuccessful attempt to tack an amendment to the sundry civil appropriation bill for 1873 (Act of June 10, 1872; 17 Stat. L., 347). The proposed amendment provided for two special agents to act under the Commissioner of the General Land Office in order—among other things—to "assist registers and receivers in preventing depredations upon the timber lands of the United States, and in prosecuting trespassers thereon."[19] The declaration by the mover of this amendment, that great frauds in western land offices had moved the Secretary of the Interior to request the proposed confidential assistance, would not seem to jibe perfectly with the O. K. which the Land Office placed upon "compromise" in that same year and the year following.

But these were the very last of that series of encomiums that, in fulsome and almost stereotyped form, had appeared yearly in the

[19] Cong. Globe, June 7, 1872, pp. 4360, 4361; 42 Cong. 2 sess.

Commissioners' reports. Commissioner Burdett found something else to talk about than the "efficiency" of "compromise" and the avoidance of "vindictiveness." Instead, he dealt "efficiency" a withering blow by stating that spoliations of the public timber to an "enormous extent" were constantly going on; and that existing laws were "powerless to prevent and seemingly powerless to punish" them. And he laid a shrewd finger upon what was undoubtedly the weakest point in the land laws when he said:

I fail to find, from the beginning of the Government to the present time, a single enactment of Congress providing any distinctive method for the disposal of that vastly extensive and proverbially valuable class of lands known as "pine lands." These lands are notoriously unsuited to general agricultural uses, but have been held subject only to pre-emption and homestead entry.[20]

He further pointed out that the sale method of disposing of these lands then in vogue—*i. e.*, by public outcry to highest bidder at Presidential discretion—was grossly ineffectual and disadvantageous to the government, which it placed hopelessly at the mercy of combinations of purchasers and speculators. He urged the complete removal of timber lands from the operation of the pre-emption and homestead laws; and their wholesale disposal by sale after a careful survey and appraisal.

These views he repeated with even greater emphasis in the following year; adding some considerations that were novel, others that were as old as the Broad Arrow. He pointed out, for instance, the value of mountain forests in helping to bring about a gradual melting and consequent equable run-off of the winter snows. And in the picture he drew of vast denudations in the vicinity of mining and smelting operations in the West, he presented a striking parallel to Dr. Schoepf's observations about the "furnaces" of New Jersey a century before.

As to remedy he was pessimistic. The ideal method, he declared, would provide for the sale of the timber without the land and for conservative logging under regulation. But this would entail a vast administration "involving . . . expenditure . . . and furnishing opportunities for fraudulent collusion and unjust exactions." For venality he regarded as inevitable under any system of public ad-

[20] General Land Office, Annual Report, 1874, p. 6.

ministration. And he decorated Mr. Hendricks' " efficient system " with the ultimate in dead albatrosses when he declared that timber frauds were of the very traditions of the General Land Office— " certified indeed by its records." He saw no hope in any system save private ownership, under which he believed individual interest would tend to restrain thievery and improvident consumption.[21]

At the time Commissioner Burdett delivered himself of these gloomy reflections just a few months more than an even century had elapsed since that defiant flaunting of the Pine Tree Flag at Bunker Hill—that historic cocking of Adventure's hat in Order's face.

America had reached the definite end of a period. It had progressed to the point where the good Dr. Schoepf's " forest service " was about to be definitely and lastingly launched after all those years of blind gropings therefor in the shape of Irish Apothecaryism, Thistleism, Willardism, " compromise." " Experience and necessity " had gone so far by 1875 that the eve of a definite forest declaration, that in some form was to endure, was actually at hand—exactly a century after that other declaration that marked Adventure's passionate breaking away from the " eating out of substance."

Those earlier strivings in Flordia and Michigan were the strivings of a not strong enough Order, an Order that would, perhaps, but could not. That era passed with Appomattox. There was now an Order that could when it would. That it would not immediately, but waited a decade longer, simply meant that old habit, old thought, was strong; not to be overthrown in a day. The idea of " open revolt " had been squelched for all time, it is true; but even the folks who were most vehement for the squelching still thought in terms of " inexhaustibility "; still were they imbued with the borderer viewpoint; still were they adventurous.

And yet this contradiction was not so contradictory as it might seem. Adventure; yes. Border freedom; yes. But always with the instinct of Order dormant; there to blaze out as it blazed in California. Adventure must not go too far. Adventure must not flare into a rebellion aiming at a breaking up of the lodge of the race. If it does Adventure itself will put it down.

[21] General Land Office, Annual Report, 1875, pp. 9-12.

The name Erastus Potter—good Yankee label smacking strongly of "Pied Cowe" origins—illustrates that. There was an Erastus Potter in 1855 at Manistee. Evidently a very roaring, boisterous sort of person, full of the spirit of "open revolt," of "resistance by force." He gave Isaac Willard great trouble; so much that in the Detroit trials he drew one of the heaviest sentences. A rebel, this Potter, truculent and unrepentant, thirsting for the blood of government agents sent into his native pineries in the name of Order.

And yet, six years later, when the great "open revolt" came, an Erastus Potter answered to Order's roll call in a Michigan regiment, and soldiered four years to put down too presumptuous Adventure; serving honorably and conspicuously; twice wounded; made a sergeant, and then a top-sergeant.

True; he may not have been the same Erastus. But the writer likes to think he was. And if he was he feels sure of one thing—he made a good top-sergeant.

The story of the growth of Order, then, from a position of precariousness, a status, more or less, of impotent adviser and persuader, deriving what strength it possessed from the saving sense of it in the hearts of men, to the attainment of the indisputable might to command—and enforce—when it would—that story comes to an end with 1875. That story has now been told, with some measure, it is hoped, of interpretative and informative worth. But it will be a better rounded-out story if, before passing from it entirely, we add to it an account of certain occurrences which, although coming to pass for the most part subsequent to the period in question, are such outgrowths of it, such striking corroborations of certain of its tendencies, as to be logically considerable with it.

Before passing to these matters, however, it were well to say a word about an event that took place within the period. This was an appropriation of $10,000 included in the sundry civil appropriation bill for 1873 (Act of June 10, 1872; 17 Stat. L., 347, 359) which is noteworthy as having been the first direct appropriation made for the protection of public timber lands in general; a distinction which, as we have seen, has been at times erroneously bestowed upon the first appropriation for the naval reservations, made in 1871.

One of the provisions of the famous circular of 1855 directed that if any of those to-be-reported "instanter" deputies should be appointed by registers and receivers they were to be paid out of the proceeds of the sales of such timber as they should seize from trespassers. The avails of all such sales and seizures were to be covered into the Treasury to the credit of the judiciary fund. Such deputies as were appointed were accordingly paid out of this fund until 1872, but it having been determined that this could no longer properly be done[22] the appropriation was made under the general heading of the expenses of the collection of revenue from the sales of public land; and specifically for expenses of suppressing depredations on the public timber, already incurred and yet to be incurred in the fiscal years 1872 and 1873. Thus was a policy instituted that has continued without a break to this day.[23]

The institution of this policy, however, marked no immediate change in the general policy of "compromise" which had grown up under the 1855 circular as interpreted by the general "inexhaustible" thought of the day. But two years after it came the new views of Burdett, as we have seen; and two years further on J. A. Williamson came to the General Land Office with views more militant than those of Burdett. He agreed with Burdett as to the probable effect of private ownership, but insisted that it would be entirely possible to procure incorruptible agents for the protection of the public timber.[24]

In March of the following year, 1877, Carl Schurz came to the headship of the Department of the Interior, bringing with him, for all his 1848 revolutionism, a background that was tinted with the theory of verboten-controlled forests about as thoroughly as the background of the average American was colored by inexhaustibility. Naturally, he and Williamson became kindred spirits as to forest affairs at once, and lost no time in devising and putting into execution radical changes in forest control that went beyond the most violent days of Willardism.

[22] Probably by a Comptroller's decision, which may have had something to do, also, with the first naval timber appropriation of the year before.—See General Land Office, Annual Report, p. 20.

[23] Similar appropriations were made in the next few years as follows: March 3, 1873, $8000; June 23, 1874, $5000; March 3, 1875, $5000; July 31, 1876, $5000; March 3, 1877, $5000. In the current year, 1928, $430,000 was appropriated. See act of January 12, 1927 (44 Stat. L., 938).

[24] General Land Office, Annual Report, 1876, pp. 7, 8, 9.

Commissioner Williamson made an active beginning in this change of policy even before Mr. Schurz took office. Early in January he directed the registers and receivers to employ no more timber deputies without previous authorization from him, requiring them to submit, at the same time, a statement of the timber business phase of their respective offices from the institution of Mr. Hendricks' "system" to the date of the order—the deputies employed, expenses incurred, amounts recovered for the government, etc.

The information adduced by this inquiry, coupled with the Commissioner's general study of the question, convinced him that the Hendricks "system" had been, so far as practical results in the matter of suppression of depredations or the collection of values were concerned, about as much of a success as had been the naval reservations in the opinion of Gideon Welles.[25] He accordingly recommended that the registers and receivers should be relieved of the timber business; and that the same should be looked after by a force of special agents appointed by him and paid out of the appropriations instituted in 1872. He argued his possession of authority to take this step from the language of Section 453 of the Revised Statutes[26] and that of the current appropriation clause[27] coupled with the Supreme Court decision in United States v. Cook.[28]

Secretary Schurz concurred in these recommendations within a month after his assumption of the portfolio, and the way was clear

[25] Between January 1, 1856, and January 24, 1877, sales of stolen timber had resulted in deposits in the Treasury to the credit of the judiciary fund totalling $199,998.50. In the same period $45,624.76 were expended for the salaries and expenses of timber deputies. Adding to this latter sum the $38,000 appropriated during the years subsequent to 1872 for timber protection, and subtracting the total from the total of deposits, it will be seen that the net "recovery" of the government under "compromise" amounted to a trifle over $116,000, considerably less than the then value of the timber on 5000 acres of pine lands.—General Land Office, Annual Report, 1877, p. 20. See also Donaldson, The public domain, 348, 47 Cong. 2 sess., H. misc. doc. 45, pt. 4.

[26] Directing the Commissioner to perform all executive duties respecting the public lands (Section 699, U. S. Comp. Stats., 1918).

[27] "To meet expenses of suppressing depredations upon the public lands, $5000" (Act July 31, 1876; 19 Stat. L., 122).

[28] 19 Wallace 591, holding that "the timber while standing is a part of the realty, and it can only be sold as the land could be, and unless lawfully cut will remain the property of the U. S."

for the termination of "compromise." The circular of 1855 ended its near a quarter of a century of existence on May 2, 1877, the date of the issuance by the Commissioner of a new circular of instructions to the local land officers, the first paragraph of which read as follows:

> The Secretary of the Interior has concluded to change the method formerly adopted for protecting the timber on the public lands, by which you were made agents for that purpose within the limits of your respective land districts, as per circular of December 24, 1855. Pursuant to directions from him of the 5th ultimo, the instructions of that circular are hereby revoked.[29]

The new instructions further stated that timber protective work was thenceforth to be performed by clerks or employees especially detailed from Washington, who were not to be permitted to compound or compromise with trespassers. The local officers were directed to coöperate with the timber agents upon request, and the latter were authorized and instructed to confer with, and seek the aid of, the United States district attorneys as occasion demanded.

It having been determined by the Secretary and the Commissioner to supplement the available appropriation of $5000[30] with several thousand dollars to be taken from the contingent funds of the General Land Office, and an organization of the suppressing force having been devised,[31] there was let loose upon the timber regions of the country almost, it might be said, out of a clear sky, such a vigorous drive of spoliation suppression as would unquestionably have produced, in the old Manistee days, that "open revolt" of which Eastman had thundered twenty years before.

Into the details of that sudden and drastic imposition of verboten upon a country which still looked at things essentially from the Borderer viewpoint, despite the decided change which had come about in the relative strength of Order and Adventure, we shall not take the time to go. It will be enough to say that Willardism was re-enacted in more uncompromising fashion that old Isaac

[29] The circular of 1877 is printed in full on p. 21 of the General Land Office report for that year.

[30] Under sundry civil appropriation act of July 31, 1876; 19 Stat. L., 122.

[31] The states containing public timber lands were divided into districts. An agent was put in charge of each district with deputies to act under him.—General Land Office, Annual Report, 1877, p. 22.

had ever contemplated in his most militant days about Manistee; and that not merely in one timber region, but practically in every section of the country where trees grew in sufficient numbers to attract the "persons who fear no danger"; or, if you prefer, "the damned thieves." The new special agents were sent everywhere. They interfered harshly with the Florida looting which the faineant naval live oak agents had never dreamed of molesting since the days of Thistle. They appeared on Puget Sound and began to ask awkward questions about the source of the raw material of a "business" that had been flourishing unquestioned for decades. There were seizures innumerable, suits galore, arrests, criminal prosecutions, wherever there was public land with trees on it. The amounts recovered through seizures and sales began to mount.[32] The drive was ruthless, relentless, uncompromising, and was constantly spurred on to renewed activity by a grim, bespectacled, Teutonic personality with the carefully guarded forests of his Fatherland in the back of his head, and a determination to make the protection of America's forests a fact instead of the sham which it had undeniably been ever since the institution of the "efficient system" of Mr. Hendricks in 1855; as a matter of cold truth, ever since 1607. Not only was there to be no compromise of any sort, declared Mr. Schurz, but offenders were to face criminal as well as civil action.[33] Citizens writing in to the Department asking information about cutting timber on the public lands for use in mining and for other legitimate purposes were informed curtly that there was no authority of law for the same, Congress never having taken the requisite action, and that anyone who cut public timber was liable to prosecution, both civil and criminal.[34]

Certainly it was high time from the standpoint of good business and of common sense for the people of America through their elected representatives to begin to take note of the valuable resource they possessed in their forests, and take thought of ways and means to ensure its most economic utilization. Just as it was time for

[32] The gross amount recovered and turned into the Treasury in the twenty-two years from December 24, 1855, to April 5, 1877, was $248,795.68. During the approximate three years from the last mentioned date to June 30, 1880, the gross amount actually collected was $242,376.68 with judgment obtained for as much more.—47 Cong. 2 sess., H. misc. doc. 45, pt. 4. p. 358.

[33] Report, Secretary of the Interior, Annual Report, 1877, p. 17.

[34] 45 Cong. 2 sess., S. ex. doc. 9, pp. 133, 147.

Order in general to begin to place a somewhat tighter rein upon Adventure—to direct instead of biding time.

But just as common sense called for the doing of these things, it was itself called for in their doing. That is to say it behooved the initiator of reform to bear in mind the forest backgrounds of the American people, their belief in "inexhaustibility," their inherited and ingrained abhorrence for the Broad Arrow theory, their basic borderer viewpoint. It behooved him also to recognize with great frankness the fact that the stealing of government timber had been notoriously winked at, encouraged, almost enforced, even, for so many years that the wrong had practically "ripened into privilege"; and to recognize with equal frankness just why such a backhanded policy had been pursued. Further, it behooved him to remember that that great human force which we have referred to herein somewhat roughly as "Adventure" was a force that all its potentialities along the lines of crudeness and lawlessness, possessed as well vast potentialities for good; that though it was a force it were wise to control, it was likewise one that it were worse than foolish to strangle.

But Mr. Schurz was unduly alarmed; just as he was unduly alarmed and imperfectly informed when he declared, in 1877, that American timber, at the then rate of utilization, would be so far gone in less than twenty years as to "fall considerably short of our home necessities."[35] It is to be doubted if he ever gained the true American viewpoint in his entire American career—patriotic, distinguished, and useful as that career was. For there are, broadly speaking, two kinds of Order: the kind that is enforced from without, and the kind that comes from within.

Carl Schurz, in 1877, knew, saw, cared for, but one thing: the law, the letter of the law, as expressed in R. S. 2461,[36] said stealing the public timber was *verboten*. That was enough for him.

To put it mildly the Schurzian methods caused violent protest. They hurt business, it was claimed. So they did. The business was crooked, retorted Schurz.[37] So it was. But under the circumstances how could it have been anything else?

[35] Report, Secretary of Interior, Annual Report, 1877, p. 16.

[36] That is, the penal clause of the act of March 2, 1831 (4 Stat. L., 472).

[37] In an address in Philadelphia, October 15, 1889, before the American Forestry Association—the same address in which he pilloried our "spirit of levity."—*Forest Leaves*, I, 120.

But into the details of this timber turmoil, that would have been more than a turmoil if it had been "sprung" two decades earlier, we shall not bother to penetrate. Those desiring the details can get them by reading the Interior Department's answer to the congressional query as to the meaning of the rumpus which was of course very speedily forthcoming;[38] as well as in the General Land Office and Interior Department reports for the four years beginning with 1877.[39] The story those documents tell is not quite the tale of Manistee—though there were threats of that sort of thing in Louisiana—but it is no concoction of milk and water at that.

A careful reading of these documents should be followed by an equally careful study of a bit of legislation that flowed directly from the new forest policy inaugurated in 1877. This was the act of June 15, 1880 (21 Stat. L., 237), which was frankly designed to bring order out of the chaos created by the sudden beginning of violent enforcement by Williamson and Schurz. This was proposed to be done by releasing trespassers from civil and criminal prosecution for all offenses committed prior to an agreed upon date, upon their payment of the government price of the land, fixed at $1.25 per acre. May 10, 1879, was first proposed as the date previous to which trespasses were to be condoned; but March 1, 1879, was eventually agreed upon. Offenses committed thereafter were to be proceeded against under the existing law.[40]

The reports made by the Public Lands committees of both houses on the proposed legislation were unanimous on one point—that the timber protection policy of the government theretofore had winked at trespassing. Men had been led into trespassing, said the House report, because governmental forbearance had been taken as quasi permission.[41] The Senate report said the trespasses had been largely committed under "express or implied license from the U. S. Government."[42]

[38] A Senate resolution of November 16, 1877, requested the information. Schurz's detailed answer of over two hundred pages was submitted January 15 following.—45 Cong. 2 sess., S. ex. doc. 9.

[39] General Land Office Annual Reports: 1877, pp. 16-26; 1878, pp. 117-24; 1879, pp. 182-87; 1880, pp. 170-78. Interior Department, Annual Reports: 1877, pp. 11-16; 1879, pp. 26-30; 1880, pp. 33-38.

[40] Donaldson, The public domain, 358. 47 Cong. 2 sess., H. misc doc. 45, pt. 4.

[41] 46 Cong. 2 sess., H. rep. 16.

[42] Cong. Record, May 21, 1880, p. 3630; 46 Cong. 2 sess.

The debates on the bill, moreover, furnish abundant evidence that top-sergeantry had been notoriously the government policy prior to the coming in of the Schurz régime. One is sufficiently informed of this state of affairs, of course, by a casual study of the government's ante-Schurz timber policy. These debates merely give it confirmation—if any confirmation be needed. Many quotations might be made testifying to the substantial dead-letterizing of the anti-trespass statutes,[43] but let us confine ourselves to the remarks of Representative Dunnell, of Minnesota, who during his entire congressional career was a staunch, if not a militant, advocate of everything having to do with forest conservation, and of whom we shall hear frequently later on. Said he:

From time immemorial there have been trespasses upon the public lands of this country. The district of the gentleman from Michigan [44] witnessed in every township of that district trespasses upon the public lands long before he had the honor of representing it on this floor. The constituents of the gentleman from Wisconsin [45] . . . were guilty . . . in territorial and early state times of committing trespasses upon the public lands. There has been perhaps an easy condition of public sentiment which has justified such trespasses. Men going out on the frontier were not inclined to ask where were the government lines and where the government boundaries.[46]

The Interior Department, declared Mr. Dunnell, was trying to make a record on the strength of its timber policy. It was bringing an immense number of suits on which it would spend ten dollars for every one recovered. Mr. Dunnell protested against this policy of sudden rigid enforcement, after so many years of shut-eye-sentryism, as "vindictive." He cited one case of a man who had bought a raft of logs in the river, in 1863, manufactured it into lumber, and sold it, only to be laid by the heels by Mr. Schurz fifteen years later, in 1878, on the allegation that the logs had been cut from public lands. Continuing, he said,

In the earlier days and even down to this time there has been a system of permits in regard to cutting timber on the public lands. A. B.

[43] See speeches of Herbert and Washburn in Cong. Record for 1880, pp. 1564, 1565, 1566, 3579, 3580, 3629.
[44] Conger, a violent opponent of the bill.
[45] Hazleton, another violent opponent of the bill.
[46] Cong. Record, May 21, 1880, p. 3630.

has been granted a permit to go upon a piece of timber land and cut timber, we will say, at the rate of one dollar per thousand feet. These permits were made use of when the time for selling such timber came as evidence that the logs offered for sale were the legitimate property of the men holding the permits.[47]

The law as finally passed condoned trespasses committed prior to the agreed upon date as regarded both criminal and civil action.[48] Its very obvious purpose was simply to accord fair treatment to men who might very properly and without putting one's tongue in one's cheek, have been called trespassers in good faith; and to serve notice at the same time that the good old days of "compromise" were over, and that the government, after the assigned time limit, proposed to call a thief a thief and act accordingly. No more significant commentary upon the change that had come over the minds of men in this general respect could be furnished than the tenor of these arguments. Compared with the tenor of those of two decades before, when a general turning over of the forests to the "persons who fear no danger" had been advocated, as a reward for the braving of the said dangers they exhibited a striking difference. Here was a strong protest against "vindictiveness," it is true, against a prosecution without warning for violation of laws that had notoriously become dead letters. But there was a most significant absence of open advocacy of a continuation of the old system. Instead, it was frankly stated that the old system should go. Washburn, of Minnesota, for example, a proponent of the bill, in arraigning the unwarranted arbitrariness of the sudden enforcement campaign, said: "The present Secretary of the Interior has taken steps (very properly I think) to stop this abuse."[49]

There was violent opposition to the bill, however. It was referred to as "the bill to license thieves on the public domain";[50] and as "the bill to condone crime and invite trespass and encourage theft."[51] There was one circumstance in connection with this opposition that is not without significance. It emanated from states that

[47] Cong. Record, May 21, 1880, p. 3630.

[48] Some writers, who have apparently never read the law itself, have asserted that civil actions only were called off.

[49] Cong. Record, March 15, 1880, p. 1566.

[50] *Ibid.*, May 20, 1880, p. 3579.

[51] *Ibid.*, p. 3582.

had either used up most of their timber or in which most of the public domain was taken up. New Hampshire, ancient hotbed of "irritated woodsmen," was against it. So were New York, Michigan, and Wisconsin. And all for the same reason: a horror of condoning thievery. The satirical gentlemen quoted above hailed from New York and Wisconsin respectively. Eastman, it will be recalled, the stout defender of the "persons who fear no danger," had also hailed from Wisconsin. Times, it would seem, had changed. The old story was being repeated. The front line of Adventure was farther west. Here were the descendants of the "irritated woodsmen" and of the "persons who fear no danger" talking about "damned thieves." Manistee was no longer border. It was now "settlements." The border had shifted to Minnesota, to the southern pineries, to the shores of the Pacific. The older timber states had attained the "got" class. They had got "theirs," got religion, got respectable, got conservative; and, having forgotten their own border days, they had got a bit censorious of conduct that was nothing more than a following in their own footsteps.

But wherever it had shifted and whatever its occasional got-away-with outlawries—and there were still to be such for years to come—there was a different spirit abroad in the land as a whole with regard to it. No longer was it the terrible ogre that the settlements, willy-nilly, had to placate by firings of "obnoxious Wilsons" and such. No longer was it a rambunctious spirit of wild freedom loaded with dangerous potentialities as regarded ordered government. No longer did it have to be truckled to and fawned upon and nice-doggied. It was truckled to, to be sure, for many years, even though it didn't have to be.

The Broad Arrow came to stay with Appomattox. Mr. Schurz clearly demonstrated that fact. But it had not come either because of the Civil War or because of Schurz. It came simply because the development of the country had reached a point where it was a necessity. It was a development of the growth of Order, a coming true of the keen prophecy of Dr. Schoepf.

CHAPTER VIII

GOVERNMENTAL RECOGNITION

Up to this point we have concerned ourselves solely with protection from spoliation; with, in a word, the Broad Arrow. The growth of the mere protective idea was naturally the thing calculated to overbulk every other consideration in forestal affairs in such a state of developing society as existed in America from the "Pied Cowe" to the seventies. Those were days of the practical, the concrete, the basic, the direct. Timber meant lumber, and lumber, money. The woodsmen of New England and their prototypes (and not infrequently their blood descendants) in the gulf *cheniers* and the pineries of the Lake Region and the South were out to take trees unlawfully. That simple fact plus the gradual growth in effectiveness of the "irritation" of those "persons who feared no danger" makes up by far the bigger part of the forest story of America up to the time the Broad Arrow became definitely established.

But forest thought, nevertheless, was evolving along other and broader lines; lines comprehending other things than the development of an effectual enforcement of the police power. Thus, as early as 1830 the timberlessness of the prairie country had prodded men into thinking about remedies for its obvious inconveniences. Sundry Missourians in that year petitioned Congress to give them a township of prairie land "for the purpose of making an experiment of raising of forest timber." The ground upon which the Senate denied the gift is not without interest. Fire, asserted the Public Lands Committee of that body, was the only thing preventing the natural forestation of the great plains. Keep fires out, and forests would spring up spontaneously in the open spaces. And the best way to keep fire out, they thought, was by disposing of

the prairie land in small parcels, thereby "multiplying the freeholders interested in keeping the fires under." [1]

During this same decade of the thirties Massachusetts had made a forest survey of her timber lands. Also an American edition of Sir Henry Stuart's "Planter's Guide" was published in New York. In the forties G. B. Emerson's "Report on the Trees and Shrubs of Massachusetts" appeared.

Henn's comments in the fifties upon the handicap that distance from timber placed upon the fertile Iowa lands, which has been quoted in another connection, naturally suggests itself here. Henn was talking for railroads, it is true, but that he—and the bulk of his constituents—were thinking very seriously of wood is sufficiently obvious.

An even more significant occurrence, considering the region whence it emanated, was a resolution by the Georgia legislature in 1858 asking the appointment of a federal commission "to inquire into the limits, extent, and probable duration of the southern pine belt." [2]

A book published in 1860 asserted, on the alleged authority "of the most experienced lumbermen," that forest consumption was exceeding forest growth by 30 per cent annually.[3]

And when, six years later,[4] Commissioner Wilson, in that same report in which he extolled the results of "compromise," devoted two whole pages to a discussion of the promotion of artificial forestation in treeless regions, he was very plainly not arguing from any sudden and individual whim, but rather from the influences of a "school" by whose propaganda he had been affected.

[1] 21 Cong. 1 sess., S. doc. 127. That the idea did not down in the state of its origin, however, is evidenced by an attempt to pass legislation thirty-six years later granting public lands for timber culture experiments to the American Forest Tree Propagation and Land Co. The bill (S. 228; 39 Cong. 1 sess.) was introduced by Senator B. Gratz Brown of Missouri, and it is to be presumed the tree company was of the same state.

[2] 35 Cong. 2 sess., S. misc. doc. 12.

[3] Kettell, "In 80 Years Progress." The estimate obviously did not take into consideration the southern pineries or the forests of the Pacific Northwest.

[4] That is, the same year S. 228 was introduced. Another bill, S. 396, was introduced the same year "to promote the growth of forest trees on public lands."

Timber demand was on the wax, he declared; timber supply on the wane. Combat this trend, therefore, he suggested, by forcing the energies of the pioneer homemaker to work against it. This could be done, he believed, by so amending the recently adopted homestead law as to require the planting and cultivation of a certain quantity of timber trees as an additional prerequisite to final patenting. Six years later—that is to say, in 1872—Commissioner Drummond made a like recommendation.[5] And by 1870, be it remembered, the lumber business of the country had changed from the individualistic, country-grist-mill afair of the thirties into the beginnings of the large scale, commercial enterprise it was inevitably destined to become.

In short, for many years before the decade of the seventies other things than tree stealing and the prevention thereof were operating toward the creation of a definite body of forest thought. The development of this thought was slow but fairly certain up to the beginning of that decade. Besides the purely economic considerations already mentioned there was one added circumstance which tended to further its progress. This was the development of scientific thought and speculation in general which, growing in weight and importance with the raising in the country of the level of educational facilities and general intelligence, had attained by the year the Michaux bequest became effective—*i. e.*, by 1870—an influence that was just about beginning to approach the not inconsiderable stage.

That it was in the seventies, therefore, that there was what might be termed rather roughly a coming to a head of forestal matters, governmentally, economically, scientifically, and even, as we shall presently see, æsthetically, was simply the operation of a law of nature. When enough water trickles into an old crater, a lake is formed; enough more, and the beginning of a river tumbles over the brink. The seventies simply marked the attainment of the point of overflow of long accumulating "experience and necessity." The time had arrived for a "working toward Order" that was to be in outward seeming vastly greater than anything that had gone before. That it was in reality but the expression in direct and visible action of events of the past, our examination of that past has made plain.

[5] General Land Office, Annual Report, 1872, p. 69.

It was very natural, too, that the first pronounced manifestation of that expression should be in connection with the attempted forestation of treeless regions. Mankind is prone to lunge at the most glaringly obvious. Fat land, difficult if not impossible to utilize, because wood did not exist within anything like a reasonable distance, made a situation that cried to Heaven; a painfully obvious drawback for which there was, seemingly, a beautifully obvious remedy—tree planting. Hence the famous so-called timber culture law of 1873.

That the tree planting idea was being widely discussed, Commissioner Wilson's little dissertation in 1866 is the best of evidence. It was, indeed, but a reflection of what was coming to be a matter of great popular interest. Timber culture might almost be said to have become something of a "rage." Nine states between 1868 and 1873 passed laws encouraging tree planting by means of bounties or tax exemptions. Commissioner Drummond, it will be recalled, echoed, in 1872, Wilson's sentiments of 1866. State investigations began to be held regarding forest destruction, notably in the timber states of Wisconsin, Michigan, and Maine. Railroads began to make experimental plantings with a view to tie timber. The new enthusiasm infected Congress. Something like a dozen tree-planting bills were introduced between 1868 and 1871, and of three similar bills introduced in 1872, two provided as well for the protection of existing forests on the public domain by requiring homesteaders of forested tracts to retain a certain proportion in timber.[1] Another bill introduced that same year was purely protective, aiming "to prevent the destruction of timber on lands of the United States." In its main features it was a reiteration of the old naval act of 1831, providing penalties but setting up no protecting or enforcing organization. Like the naval act, too, it provided for a dividing of penalties between informers and authorities.[2]

In considering this new tendency toward actual protection appearing in this attempted legislation, it is just as well to recall

[1] 42 Cong. 2 sess., H. R. 2107, Cong. Globe, April 3, April 11, and April 17, 1872, pp. 2140, 2307, 2368, 2504-06. 42 Cong. 3 sess., H. R. 3068; Cong. Globe, December 3, 1872, p. 15. The third bill was 42 Cong. 2 sess., S. R. 882, which in the following session of the same Congress became the timber culture law. It was introduced February 20, 1872, by Senator Hitchcock of Nebraska.

[2] 42 Cong. 2 sess., S. R. 705.

that this same year, 1872, was the year which witnessed the beginning of the actual working of the system of direct appropriations by Congress for the protection of timber on the public lands, both naval and general.[8] This conjunction of events was no mere coincidence; nor was it, necessarily, the result of a definite planning toward a definite end. It was simply a falling side by side, by force of the prevailing forest wind, of a couple of similar straws.

The course of the wind was pointed that same year, 1872, by a straw of a different nature when the Arbor Day idea was launched into the world in Nebraska, on April 10,[9] with the planting of over a million trees; as well as with the rendition, it is safe to add, of "Woodman, Spare That Tree" by well-starched little school girls. The æsthetic had arrived.

The reader is earnestly entreated at this point to jump at no hasty conclusions with regard to the preceding paragraph. No sneer at Arbor Day in particular or idealism in general is being indulged in. The writer's intention is merely to lay the foundation for a gradual demonstration of a phase of the "Moving toward Order" in American forest affairs which common fairness and a decent regard for accuracy demand should be impartially developed. The title, "Woodman, Spare That Tree," is merely used in a symbolic sense. That good, if somewhat sentimental, old song was composed long before the tree-planting frenzy of the seventies came upon the country, and the composer probably little dreamed that his effusion was destined to become effective propaganda for a well enough meaning but thoroughly illogical "cause"; a cause that, perhaps without intending it, implanted in the minds of great masses of the people another "legend," antithetic to "inexhausti-

[8] Naval, by act of March 3, 1871 (16 Stat. L., 527), general, by act of June 10, 1872 (17 Stat. L., 359). 1872 was also the year in which the national park system was begun with the setting aside of the Yellowstone region. Harvard was enriched that same year by the Arnold bequest.

[9] The date was selected on the suggestion of J. Sterling Morton, the originator of the idea. It was changed to April 3, two years later by gubernatorial proclamation. In 1885 the Nebraska legislature fixed the date definitely on April 22, Mr. Morton's birthday, and made it a legal holiday. Ten years later, just to show they were proud of the distinction, Nebraskans by legislative decree proclaimed that their state's popular designation should be "The Tree Planter's State."—U. S. Department of Agriculture, Circ. No. 8, June, 1919.

bility" indeed, but every whit as misleading—to-wit: that utilization of the forest was a thing well-nigh morally wrong."

At any rate this æstheticism was one complication that had its inception about this time, and we might just as well become acquainted with it now, for we shall have occasion to meet it again. Let it not be thought that it developed because of the Arbor Day idea. It was a thing that was bound to crop out and run its course, like a form of emotional measles. The human, and especially the American human, must have his dash of sentimentalism in connection with every new interest, before he gets it down to a basis of common sense. The Arbor Day idea was simply a convenient peg for this new form of camp-meetingism to be hung to.

There was also another complication that had its beginning about this time to which some slight notice must be given. Just as the early Arbor Day point of view tended to befog the American forest problem with a cloud of sentimentalism, so did a disposition unquestioningly to accord infallibility and super-excellence to anything—man, machine, system, what not—that came out of Europe, similarly tend with a cloud of parvenuism. Not that it ever did this to a very serious extent. But it did do it to an extent that was noticeable and that was not void of influence over a considerable period.

Now when European forestry was discovered by Americans—which, again, was just about this same time—and it was seen to be a beautiful system that worked and paid—in Europe—not all of its discoverers believed that it could be made to work and pay similarly in America; or that it would be even wise to try to introduce it without considerable modification. Most of these early discoverers clearly recognized the difference between European and American systems of land tenure, and the import of that difference with regard to the establishment of a forestry system like Europe's. But all of them didn't recognize it. And even of those who did, the recognition didn't go deep enough. After all, the thing was European. Therefore, it must be a rather finished affair.

" The writer does not think this is an exaggeration. In his opinion the forest literature of the period under discussion, particularly that in the form of verse, abundantly proves it. A very well-informed forester, however, for whose opinions the writer has the utmost respect, says the viewpoint was so restricted as to be hardly worth mentioning.

The gist of the thing was just this: the discoverers saw too much Europe and too little America. They visualized a slightly modified European system applied to America. They did not see for one moment an American forestry evolved by American brains out of American "experience and necessity" and with precious little European about it save a few general principles. They had got into their heads a system the basis of which, after all, was just one thing—"Verboten." They did not see that the Order that was gradually taming and controlling American adventure had just about as much in common with Verboten as Heidelberg duelling has with American football. They forgot that America was founded on "irritation" brought about by the "eating out of substance."

One of our discoveries of European forestry nearly coincided with the birth of Arbor Day. Two months, precisely, after that initial celebration in Nebraska, the act of June 10, 1872 (17 Stat. L., 389), authorized the appointment of commissioners to attend the International Exposition due to open in Vienna in the ensuing year. Following which the joint resolution of February 14, 1873 (17 Stat. L., 637), authorized the despatch of sundry "scientific men" . . . to "attend said exhibition and report their doings and observations."

One of these fortunate [11] men was John A. Warder, M. D. We pick out Dr. Warder because it fell to him to prepare a report upon the forestry and forest-products displays which was certainly one of the first official American publications upon the subject of European forestry in general, if it was not the very first.[12] For that reason only is Dr. Warder's report [13] especially noteworthy. A paragraph, however, is worth quoting, in view of certain events which occurred more than thirty years later.

After speaking of the necessity for frequent congresses of forest managers of the different European nations to agree upon policies

[11] There was some question as to that. Some of them seem to have had some difficulty collecting their honorariums and complained bitterly of the way they were used by the State Department.—43 Cong. 1 sess., S. rep. 451.

[12] A report was made to the State Department in 1872 upon "Forest Culture in Sweden" by C. C. Andrews, at that time American Minister to that country.

[13] Reports of United States Commissioners to Vienna Exposition. 44 Cong. 1 sess., H. ex. doc. 196.

with regard to the handling of forest questions which transcended national boundaries and therefore called for more or less unified action, and after mentioning one such congress held in Vienna during the exposition, he said:

> Our own country, comprising great states, drained by the same rivers, flanked by the same mountain ranges, and bounded by the same oceans, is situated in many respects just as the aggregate of the several countries of Europe which found it necessary to hold this international congress, except that our glorious union spreads its aegis over us all, and *national*[14] legislation can be made to apply to the whole vast extent.

Perhaps if the doctor had been as well-grounded in his Constitution as in his Materia Medica he might not have been so confident. But he was writing within a decade of the great triumph of Federalism in the Civil War, and he bore the commission of the military leader who had headed that triumph.

So much for the doctor's "observations." He is silent as to his "doings."

Close upon the heels of the joint resolution of February 14, 1873, came the inevitable legislative crystallization of that agitation for the forestation of treeless regions which, as we have seen, had been gathering force ever since the thirties. The men had scarcely been chosen when Congress passed the act of March 3, 1873 (17 Stat. L., 605), the title of which was "An act to encourage the growth of timber on western prairies," but which has gone down in history, after its brief and ineffectual existence, as the "timber culture law."

Of this second American attempt at artificial forestation there is little more of success to record than of the first, which had fizzled at Santa Rosa exactly forty years before. Becoming a law just two years after one of the sponsors of the old live-oak experiment, Brackenridge, had passed to his reward, the timber culture act had a formal existence of less than twenty years, but it became a dead letter long before its final demise in 1891, of which we shall speak later. Its story need not detain us long. It is simply the story of a failure; one of those brave experiments made by ignorance in the attainment of knowledge. Its moral, if it has one, is that it is just as difficult to reform nature by passing laws as it is to reform human nature by the like process. On its face the proposition was beautifully simple and simply beautiful. All you

[14] The italics are the Doctor's.

did was take 160 acres of prairie land, plant a certain acreage to timber trees, and then, after a certain period, the homestead was yours—provided your trees were alive and well.

Sometimes the scheme worked—where the conditions were favorable. Generally it did not. Drouth and dust and lack of knowledge of what was in truth a very delicate and complicated science conspired to blast thousands of hopes. Far from being a simple matter, it was discovered that making trees grow on the plains was an exceedingly difficult one at best, when it was not an utter impossibility. It was a game for a patient investigator with unlimited time and capital at his disposal; not one for a pioneer with hunger at his elbow. The seemingly liberal terms of the law, too, were speedily discovered to be quite the reverse in view of the stiffness of the problem to be solved. Five attempts to make the law more workable,[15] in response to appeals and petitions which plentifully besprinkle the pages of the congressional records of the day, were made between 1874 and 1878. Then they quit. It will suffice to say that all of the amending attempts fell short of their objective.[16]

The year 1873 was noteworthy however, in still another way. In August the American Association for the Advancement of Science met in national convention at Portland, Maine; and out of its proceedings came the impetus that pushed the long-developing idea of direct governmental forestry activities finally across the line into the domain of accomplished fact.[17]

The convention itself was moved to action through the instrumentality of one of its delegates, Dr. Franklin B. Hough, of Low-

[15] Acts: March 13, 1874 (18 Stat. L., 21); May 20, 1876 (19 Stat. L., 54); June 19, 1876 (19 Stat. L., 59); June 14, 1878 (20 Stat. L., 113); June 19, 1878 (20 Stat. L., 169). See also act March 3, 1893 (27 Stat. L., 593). This was an act for the relief of entrants in good faith under the 1873 law, who had been caught by its fair promises and squeezed by its impossible conditions.

A circular of instruction regarding the operation of the law was issued by the Department of the Interior, April 6, 1874.

[16] See article by E. A. Bowers in *Forest Leaves,* Vol. III, No. 6 (June, 1891), in which he states that of 38,000,000 acres entered only something under 50,000 were successfully "timber-cultured."

[17] Before this, however, Representative Haldeman of Pennsylvania in the House, on April 11th of the year before the convention, had spoken in favor of one of the two forest protection measures he introduced; a speech bristling with erudite quotations from European forestry experts.—42 Cong. 2 sess., H. R. 2197.

ville, New York, whose paper on "The Duty of Government in the Preservation of Forests" brought about the creation of a committee to memorialize Congress and the state legislatures upon the urgent need for governmental action with regard to forest protection and the cultivation of timber. Certain legislation to that end was recommended, and a sub-committee consisting of Dr. Hough and George B. Emerson was deputed to prepare the memorial and further its consideration.

The memorial, together with a draught of a suggested joint resolution of Congress embodying the ideas of the society as to necessary legislation, was transmitted to Congress with a special message by President Grant on the 19th of the following February.[18] Approval of the proposed legislation by the Secretary of the Interior and the Commissioner of the Land Office was likewise transmitted. The whole was referred to the Committees on Public Lands of both houses.

No action was taken by the Senate but the House responded on March 17 with a report[19] warmly commending the action of the Association, and submitting, with recommendation, a bill[20] based upon the tetntative draught put forward by the memorialists. The author of this report, it is interesting to note, was the same Representative Dunnell, of Minnesota, who, in spite of his enthusiasm for forestry, took such a strong stand a few years later against the arbitrary enforcement campaign of Secretary Schurz.[21]

The proposed bill advanced no radical ideas. It merely called for the creation in the Interior Department of a Commissionership of Forestry the incumbent of which was to compile forestry statistics and make some rather mild investigations. But it made no progress. Neither did a similar bill introduced by Dunnell in the following Congress.[22]

[18] 43 Cong. 1 sess., S. ex. doc. 28.

[19] 43 Cong. 1 sess., H. rep. 259.

[20] 43 Cong. 1 sess., H. R. 2497. The report also includes the Memorial, Dr. Hough's paper at the Portland Convention, and other material bearing upon the furtherance of forest protection, with a wealth of quotation stretching from Pliny to Evelyn.

[21] Dunnell had submitted another report a few weeks prior to the submission of the one on H. R. 2497, in which his friendliness to forestry was further displayed. This was 43 Cong. 1 sess., H. rep. 66, passing upon proposals to cure the defects in the timber culture law.

[22] 44 Cong. 1 sess., H. R. 1310.

Dunnell, however, perceiving that his bill had no chance of enactment as a separate piece of legislation, contrived to attach the substance of it as a rider [23] to an appropriation act for the fiscal year 1877, approved August 15, 1876 (19 Stat. L., 167). An even century since the great Broad Arrow resentment had struck. Dr. Schoepf's "no forest service" was definitely of the past.

Little time was lost in giving the new legislation effect. Two weeks after the law's passage Dr. Hough was appointed by the Commissioner of Agriculture to inaugurate the work he had so zealously advocated. Why the change in departments was made—the reader will recall that the original bill recommended by Dunnell placed the proposed work in the Interior Department—the writer has been unable to ascertain. The close connection between agricultural interests and the prairie tree-planting movement, and the active interest taken in all phases of the forest and timber question by granges and farmers' clubs of the period were undoubtedly not without influence. Farm journals of the sixties and seventies had much to say about an alleged connection between the cutting away of the timber and a decided change for the worse that was said to have taken place in the climate, rain and snow fall, stream and spring content, general salubriousness, etc. There was even one communication in which the argument was advanced that the country's morality was on the wane as the area of cleared land increased. At any rate, whatever the influence, forestry was thus made officially an agricultural subject at its start-off, and such it has remained, technically at any rate, to this day.[24]

[23] This proviso, which constitutes the legislation under which the beginning of the Forest Service of to-day was actually made, reads: "That two thousand dollars . . . shall be expended by the Commissioner of Agriculture as compensation to some man of approved attainments, who is practically well acquainted with methods of statistical inquiry, and who has evinced an intimate acquaintance with questions relating to the national wants in regard to timber to prosecute investigations and inquiries, with the view of ascertaining the annual amount of consumption, importation, and exportation of timber and other forest products, the probable supply for future wants, the means best adapted to their preservation and renewal, the influence of forests upon climate, and the measures that have been successfully applied in foreign countries, or that may be deemed applicable to this country, for the preservation and restoration or planting of forests . . . ."

[24] For many years prior to the establishment of the forestry agency, too, the annual reports of the agricultural section of the government were refer-

One other thing, too, it were well to note here. The new forestry agency had nothing to do with the timbered areas of the public domain. They remained where they were—under the General Land Office in the Department of the Interior, and their protection and administration was no affair of the new organization. Thus at the very beginning of governmental recognition was the curious system of forestry without forests, and vice versa, instituted, that was to last for many years. When Dr. Hough took charge of his desk in a bureau—for that was the exact size of his job—the forests proper were still being protected, more or less euphemistically, by the registers and receivers under the old " instanter " circular of Christmas Eve, 1855. Several months were yet to elapse before Williamson and Schurz began their famous offensive. And the protection of the naval live oak, it will be recalled, had been abandoned only a few weeks before.

It will be necessary, therefore, to bestow most of our attention for a time upon but one branch of the now divided forest stream, giving a glance now and then to the progress of the other, in order to have its salient features in mind, when the two come together again after a quarter-century.

During its first decade of existence, the work of the new governmental agency was almost exclusively along statistical lines. Its activities were necessarily circumscribed as the result of very small appropriations, but both Dr. Hough, who remained in charge until 1883, and Mr. Nathaniel H. Eggleston, who succeded him in that year, seem to have been indefatigable workers and to have done a vast amount of work along the lines of collecting facts and figures dealing with every phase of forestry and its related, or supposedly related, subjects. Most of this accumulation came to be embodied in four ponderous volumes crammed with an amazing amount of

---

ring to the timber question. As early as 1849, when agriculture was under the Patent Office, timber waste was decried. Likewise, the report for 1860, also under the Patent Office régime, devoted thirty pages to the " Forests and Trees of North America," by S. G. Cooper. Finally in 1875, the year before Dr. Hough's advent, upwards of a hundred pages were devoted to an article on " Forestry Statistics," illustrated with a great number of timber maps, graphic charts, etc. There can be no question that the agricultural branch was far more interested in the subject than was the public lands branch.

detail appearing at intervals from 1877 to 1884.[25] Dr. Hough prepared the first three; Mr. Eggleston, the fourth.

Dr. Hough, in accumulating the materials for this work, travelled extensively in the United States and Canada and proposed going to Europe as well, but the necessary appropriations were not forthcoming, despite urging both in and out of Congress.[26] In 1881, however, when the agency was reorganized into the status of administrative division, a special agent was despatched thither. In 1883, 1884, and 1885 special agents were employed as extensively as appropriations would permit to investigate the progress of the tree-planting efforts in the prairie country, observe forest conditions in various sections of the country, examine into the causes of forest fires, etc. One of the first of these agents to be appointed, by the way, was Dr. Warder, who had followed up his Vienna activities by organizing in Chicago, in 1875, the first forestry society [27] in the country, the American Forestry Association, of which he became the first president.

Much information was gathered by means of a voluminous correspondence instituted by Dr. Hough with forestry officers in Europe and with interested persons in every section of the United States, the domestic correspondence including such subjects as the consumption of wood in industry and the reasons for the unsatisfactory working of the timber culture law. In 1878, through the courtesy of the War Department, the army was utilized in this work, officers at the posts throughout the country completing questionnaires regarding forest conditions in the regions contiguous to their stations.[28]

[25] Vols. 1 and 2 are entitled Reports upon Forestry; 3 and 4 are Reports on Forestry. They were all published by the Department of Agriculture by authority of Congress and submitted to that body as reports. Vols. 2 and 3 were also published as Congressional documents, 46 Cong. 2 sess., H. ex. doc. 37, and 47 Cong. 1 sess., H. misc. doc. 38.

[26] The Senate was petitioned in 1877 and 1878 by the American Nurserymen's Association to examine into the status of European forests. 45 Cong. 1 sess., S. Jour., p. 44 (November 6, 1877); 45 Cong. 2 sess., S. Jour., pp. 136, 263 (January 9, and March 5, 1878). Likewise a bill introduced by Senator Paddock on November 13, 1877 (45 Cong., 1 sess., S. 284) provided for an inspection of European forests by two commissioners and a secretary and a "report on forestry and tree-planting" and the influence of forests on climate, rainfall, and water supply.

[27] The "American Forestry Council" had been formed in the American Institute, of New York however, the preceding year as a sort of standing forestry committee for that organization.

[28] Commissioner of Agriculture, Annual Report, 1878, p. 515 *et seq.*

One correspondent in this year, not of the army however, made some interesting observations regarding the remarkably favorable combination of conditions for the growth of fine timber existing in the Puget Sound region, and stated that the forest there would reproduce itself not only after fires and cuttings, but even after ground had been cleared and cultivated.

This circumstance is emphasized at this point, in what may seem an unnecessarily digressive manner, for a purpose that will be developed later. The correspondent was not exaggerating. Compare what he had to say with the report of the Surveyor-General of Washington Territory of more than twenty years before, wherein it is said that

> Firs, frequently 15 feet in diameter and 200 feet in length, prostrate, encumber the ground; from amid the ruins of an ancient forest rises another of the same character apparently many hundreds of years old growing amid the scarcely decayed trunks of the first.[29]

We shall have occasion to speak again of this truly wonderful forest region which an old pioneer ditty of the fifties used to describe as

> "Covered all over with timber
> Like hair on the back of a dog."

Appropriations for the first decade of the new work totalled $60,000. An appropriation of $2500 was made to continue the work in the second year of its existence; but although Commissioner of Agriculture, Le Duc, urged larger appropriations in a special report made to Congress late that same year [30] none whatever were forthcoming for 1879 and 1880. Disbursements from other funds, however, enabled the work to be kept up,[31] $2500 being so expended in each of the appropriationless years. Thereafter, appropriations were made yearly as for an established administrative division.

The appointment of the special agents in 1883 was part of an effort in the direction of greater aggressiveness, of an attempt at getting away from mere fact-gathering to a usable fact-disseminating, such as what kinds of trees to plant under certain conditions and how to plant them; this in connection with an attempt to demon-

[29] General Land Office, Annual Report, 1855, p. 157.
[30] 45 Cong. 2 sess., ex. doc. 24.
[31] 55 Cong. 3 sess., H. doc., 181, p. 8.

strate the reasons for the poor success of so many attempted plantations in the plains region. A touch of militancy was added by an urging that greater efforts be made to protect the public domain timber lands from depredation—the said timber lands being, it will be remembered, of the province of the General Land Office.

There is no evidence that this outburst was in any sense a criticism of the Land Office, or a veiled hint that the forests would be better placed administratively elsewhere. Forest looting and forest burning were going on, beyond question, and only a comparatively puny effort was being made by government to combat them. What more natural than that an activity having to do with forests should express concern thereat? All the same, this little occurrence is worth noting. It, too, was a straw tossed up by the start of a breeze that was to blow for a long time. Mr. Eggleston's commentary upon thievery in his report of two years later has been quoted hitherto in another connection. He went on to remark upon that same occasion that he was powerless to do anything about the reports of depredations that continually reached him except refer them to the Land Office. And he urged the withdrawal from sale and patenting of all timber land on the public domain.

A number of other things occurred in these last two years of this first decade that are of interest as "beginning," or premonitory, phenomena. There was the noting, for example, that the pineries of the South were beginning to compete with the Lake States in the Chicago lumber market—a thing that had its meaning, though there were doubtless few who comprehended it. Then there was the urging for the establishment of experiment stations in different forest regions for the study of their peculiar conditions. There was an extensive report by a special agent of the Division of Entomology upon the ravages of forest insects.[82] There was a sprouting up of civic organizations devoted to forestry. The American Forestry Congress, organized in Cincinnati in April, 1882, held a special meeting at the Department of Agriculture in May, 1884, at which papers were read upon, among many other forest topics, the influence of the forest cover upon stream flow and climate. There was an exposition at New Orleans this same year at which the Forestry Division exhibited; making a brave attempt to prove the feasibility of timber culture by transplanting on the exposition

[82] Commissioner of Agriculture, Annual Report, 1885, pp. 319-32.

grounds a grove of "planted" trees from Nebraska and vicinity. A "Southern Forestry Congress" met and organized in Florida in 1885. Some thousands of packets of tree seeds were sent out to prospective tree-growers.

This first decade, of course, was nothing but a period of beginnings, of more or less groping about, just as the entire matter of forestry in America was a groping about. Brought about imperceptibly by the operation of the laws of "experience and necessity," by the change from a pioneer state to one calling for greater restraints, it was itself a pioneer state in its especial realm of thought, with all of a pioneer state's imperfections—to say nothing of its poverty. Its greatest monument must be those four volumes of special reports representative of such prodigies of sedentary labor, but of no particular value to-day save in an antiquarian sense.

It has been said of Dr. Hough by one of those who came after him that he was no "trained forester," but only a lover of trees and a writer of local histories. "We search in vain," quoth the reviewer for the "Nation," [33] "for the practical suggestions we had the right to expect in so ambitious a work."

The educational work which the new forestry division was performing was greatly augmented by the appearance, in the mid-eighties of what was then and still is a very notable work. This was the "Report on the Forests of North America," prepared by Professor Charles S. Sargent, of Harvard, for the Tenth Census, 1880, to which he was attached in the capacity of special agent. Professor Sargent was well qualified for the work by his experience at Harvard, where he occupied the chair of arboriculture, and directed the arboretum provided for by the bequest of James Arnold, in 1872.

This work,[34] by far the most ambitious on forestry which had appeared up to that time in America, commanded wide attention both here and abroad. It unquestionably "gave rise to a general discussion in the public press upon forests and their complex relations to the welfare and development of this country," [35] and was consequently most telling propaganda, not necessarily so much for forestry *per se* as for the creation of a question as to the validity of

[33] Issue of January 30, 1879.
[34] 47 Cong. 2 sess., H. misc. doc. 42, pt. 9.
[35] *Forest Leaves*, February, 1889, p. 23

" inexhaustibility " and the wisdom of the old easy point of view as to borderism.

There is one circumstance in connection with the effect this work produced that may aptly be termed impressive. Francis Parkman, the historian, it will be recalled, had been rather wantonly wasteful when he had toured the western country in his young manhood. By 1885 he had lived many years and seen many changes. And he paid, in that year, a glowing tribute to Professor Sargent's work in the course of which he said:

The American people are heirs of a tradition which, though perhaps inevitable under the circumstances, has become a source of serious mischief.[36]

Thus of the past and of " inexhaustibility." Of the management of the timber resources still remaining, he said:

It remains to be seen which alternative will be adopted, that of squandering the capital or living on the income.[36]

But for all that he maintained that " the axe was not the worst enemy of the forest," placing ahead of it the category of dangers, fire and unrestricted grazing.

Of non-governmental activities about this time much might be said. The Arbor Day idea spread rapidly. Horticultural societies and similar organizations evinced a continuing interest in forestry. State forestry associations were formed. Acts to encourage timber planting were adopted in several states. One state even sent a commissioner to Europe to investigate forestry methods.[37] This naturally brought up the question of the lack of forestry instruction in America. The executive committee of Amherst College urged the inclusion of courses in forest culture in the curriculum in 1876. Early in 1880 Congress was again memorialized, this time by the St. Paul Chamber of Commerce, which desired a grant of land for the establishment of a school of forestry. This movement was backed by C. C. Andrews and by Dr. Warder, who was still President of the American Forestry Association. A rather impressive list of backers of the proposal was got together, but President Eliot and Professor Sargent of Harvard opposed it, the latter declar-

[36] *Atlantic Monthly*, June, 1885, p. 835.
[37] Connecticut, in 1877.

ing the time for such a venture in America had not arrived. Apparently the views of the minority prevailed, for nothing came of the matter.[38]

Early in 1882 the Senate Standing Committee on Agriculture became the Committee on Agriculture and Forestry.[39]

This first extensive gathering of American forestry experts and enthusiasts, in April, 1882, was a most important event. Every man of any prominence in the forestry movement attended.[40] Everybody got acquainted, and the movement thus acquired a cohesion and a concentrated force it had not previously possessed. From it may be said to date the real beginning of the American Forestry Association of to-day. Dr. Warder's society of the same name had never greatly prospered, and may be said to have been in extremis at the time of the Cincinnati gathering. A meeting of what was left of it was called together during the Congress, and it was probably decided at that time that the success attending the new organization's launching made the old one an impossibility. At any rate when the Congress held a second meeting later that same year[41] the old association quietly sank its identity in that of its triumphant rival.

The congress is to be borne in mind for another reason. It marks the beginning of the coming into power and prominence in forestry councils of a man who was to direct the course of governmental forestry during the most critical decade of its history and exercise a strong influence upon the development of the forestry movement in general.

This was Dr. Bernhard E. Fernow, who succeeded Mr. Eggleston as head of the Division of Forestry, March 15, 1886; his accession very nearly coinciding with the advancement of the Division to permanent statutory rank, by virtue of the act of June 30, 1886 (24 Stat. L., 103); he thus becoming the first chief of the division formally so recognized. He was likewise the first trained forester to direct governmental forest work in America, if he was not the

[38] 46 Cong. 2 sess., S. misc. doc 91.

[39] The new designation was first employed in the first session of the Forty-eighth Congress, and has not since been changed.

[40] Schurz was not present, but he was never a forestry enthusiast in the sense of being actively interested in all its phases. Always friendly to it, he was nevertheless more interested in the one question of the prevention of depredations.

[41] At Montreal, in August.

first to reside in America. It is to be doubted if at the time he took office there was in the entire country another than himself who could boast of a training for forestry as a profession in a European forest school, coupled with subsequent experience in the actual practice of that profession in the state forests of Prussia.

Dr. Fernow went to the Cincinnati Congress of 1882 as a comparative unknown, he having been in America at the time but a few years. He became the organization's secretary the following year and the chairman of its executive committee in 1888, retaining the latter position until 1898 and filling it with marked ability. Later he became the society's first vice-president. For the better part of its first two decades, therefore, it is no exaggeration to say that he was the driving force not merely of the forestry organization but of the cause of forestry in America. His " say " with regard to the strategy of the forestry movement during all that time was made even more nearly absolute by the fact that from 1885 to 1898 he edited the Association's proceedings.

This quick attainment and tenacious retention of leadership is not to be ascribed to superior professional training alone, though unquestionably that was no handicap. It was the possession by Dr. Fernow of tact and horse sense that principally enabled him to advance substantially a difficult cause under none too favorable circumstances. Knowing what we do of his background, and of the activities of a compatriot of his at the head of the Interior Department a few years before, we might reasonably jump at the conclusion that his administration of the Division was a furious railing at American waste and thievery and a vehement advocacy of a forthwith adoption of " verboten." Rather curiously, it was nothing of the sort.

Dr. Fernow was a forester, but before that he was a practical man. He saw as clearly as had that other German forester in the days immediately following the Revolution that a change in American forest thought by way of the crushing legislative enactment and the crushing enforcement thereof would never be brought about; that " experience and necessity " would have to run their course and do their work.

Seeing that, he further saw that nothing was to be gained by a policy of vituperation and antagonism; but that on the other hand everything might be lost thereby. A different reaction to the forestry

theory was already beginning to appear. Forestry was beginning to attract derision and arouse resentment. The word "denudatic" had recently been coined, and when Dr. Fernow stuck his head up above the ruck as chief of the division that word was hurled at him.

There was nothing remarkable about the development of this spirit of hostility. Part of it, perhaps a great part of it, was undoubtedly the unrighteous anger of the "damned thief" element, who saw in forestry a Mene, mene, tekel, foretelling the coming of the end of the "good old days." But just as certainly much of it was the righteous indignation of decent men angered at the unjust reflections which with a fine indiscrimination, was being cast upon lumbermen in general. Some of it, too, was just the old American feeling founded on "Inexhaustibility" and inborn hatred of the "Broad Arrow."

But whatever it was founded upon, the point was that it existed, that it was powerful, and that it was tending to grow. Dr. Fernow proposed to combat it in the most effective possible way; to-wit: by proving the usefulness of the Forestry Division by actually making it useful. He did not propose to throw away effort in futile opposition to the old wasteful methods, which he clearly foresaw were bound to persist just so long as there were abundant virgin timber supplies. This is not to say that Dr. Fernow approved of those old methods. But although he was not a native American, he comprehended the influence of pioneer conditions upon the American forest situation far better than did the average American interested in forestry; whose tendency was altogether too much, as we have seen, to overlook the influences that had produced that situation, and to assume that European methods, the outgrowth of European conditions, would infallibly remedy it. In his very first report Dr. Fernow even went so far as to minimize the enforcement feature even as applied to Europe by saying:

> It is not the control of the Government over private property, it is not the exercise of eminent domain, it is not police regulations and restrictions that have produced desirable effects upon private forestry abroad, but simply the example of a systematic and successful management of its own forests, and the opportunity offered by the Government to the private forest owner of availing himself of the advice and guidance of well-qualified forestry officials.[42]

[42] Commissioner of Agriculture, Annual Report, 1886, p. 166.

Words of wisdom and restraint we shall do well to bear in mind later on.

Dr. Fernow assumed, therefore, that the historical, statistical, and what might be termed the introductory phases of forestry had been sufficiently covered, at least in a rough way, by the work done in the preceding decade, and proceeded at once to direct the activities of the Division along more practical lines. Forestry propaganda in the nature of addresses, printed articles and exhibits at the principal expositions[43] was not neglected, but the real effort of the Division was directed upon things helpful to large consumers of timber, for whom data were assembled touching the properties and working qualities of various woods, and their most satisfactory application. Information regarding such things as railroad ties, wood pulp, and naval stores was disseminated. Help was extended to the mining, charcoal, iron and other wood-using industries. Technical investigations in such things as forest biology and forest mensuration were made. A complete forest nomenclature, vernacular as well as botanical, analyzing over six thousand names, applied to five hundred American species, was prepared by Mr. George B. Sudworth, the division dendrologist.[44] Studies were made in tree-planting, some plantations being made in the Nebraska sand hills in 1891, and some arid land tree-planting experiments being conducted in 1897 at the request of the Secretary of the Interior. In general, however, in work of the last-mentioned description the Division was at a disadvantage, it having no extensive forests to utilize for studies in silviculture and forest economy and no corps of trained foresters. Private lands could not be used because the operating funds were public. Attempts to secure the use of military and other reservations were unsuccessful.

[43] The American Forestry Exhibit at the Paris Exposition of 1889 is described by Dr. Fernow at pp. 749-77 of H. ex. doc. 410, 51 Cong. 1 sess. At the Chicago Exposition in 1893, Dr. Fernow was in charge of both the American and German forestry exhibits.

[44] It is peculiarly fitting to note at this point that Dr. Sudworth's death, on May 10, 1927, brought to a close an official connection of over forty years with American governmental forestry activity. Coming to the old Forestry Division in 1886, a few months after the beginning of the Fernow régime, Dr. Sudworth was at the head of dendrological activities till his death. During this long service he produced many noteworthy works, of which perhaps the chief was his "Check List of the Forest Trees of the United States," a monumental amplification of the work noted above, which was published a few weeks before his death.

All of this work and the generally tactful way in which it was performed proved to be, of course, the most effective kind of propaganda; and it did much to allay the "denudatic" spirit which had greeted Dr. Fernow when he took office. A great deal of the suspicion of faddism which, not without some justice, had attached to the movement was cleared away. It is not unreasonable to suppose, too, that it helped to strengthen governmental recognition in the most practical of ways by loosening the public purse strings during the twelve years of Fernow's stewardship to the extent of $230,000, all told, as compared to the $60,000 Hough and Eggleston had handled.

Efforts were made for several years to further the work of the Division by the distribution of plant material for the encouragement of private forestation, the appropriation clauses from year to year providing for the "distribution of valuable economic forest-tree seeds and plants." It was not long, however, before the futility of this whole proceeding was recognized and the law became a dead letter.

The year after he took charge of the Division, Dr. Fernow delivered the first course of technical forest lectures presented to a body of students in America. This was at the Massachusetts Agricultural College. He afterwards lectured similarly in Nebraska, Colorado, Wisconsin, and California.

The activities of the Forestry Division under Dr. Fernow, too, had a more positive result than the mere allaying of suspicion and hostility. It was largely responsible for a great stimulation of interest in forest conservation, manifesting itself in various ways—the formation of associations, the creation of commissions, and the enactment by the states of considerable forest legislation. There began to be a demand, too, for forestry instruction. Dr. Fernow's initial series of lectures at the Massachusetts Agricultural College was soon followed by the establishment of lectureships here and there among the colleges; and finally New York, in 1898, provided for the establishment of the first forest school in America at Cornell University, and for the purchase of 30,000 acres for an experimental forest.

But on the other hand although the forest was, next to agriculture, the greatest source of national wealth in 1890, and although Dr. Fernow strongly urged it, a thorough canvassing of the timber

situation for the census of that year was refused on the ground that it was not a proper subject for investigation; although many inferior industries were thoroughly canvassed.

These years of the Fernow dynasty are chiefly notable, after all, on the legislative side. It was in this period from 1886 to 1898 that two of the most important measures in American forest history were enacted into law. These were the acts, respectively, of March 3, 1891 (26 Stat. L., 1095, 1103), and June 4, 1897 (30 Stat. L., 34), the first of which brought the old King's Forest theory back by the definite establishment of national forests; the second of which made provision for their protection and administration. Before considering these laws, however, a word as to legislation in general.

The growing interest in, first the tree-planting movement, and then forestry in general since the seventies had, as might be expected, been reflected in a gradually growing volume of legislative activity, not only in the states but also in the national Congress. Between 1870 and the retirement of Dr. Fernow from the direction of the Division in 1898, considerably more than 150 forestry measures were introduced in that body. This does not include the timber culture act and its several amendments. The bills introduced had to do with every conceivable phase of the forestry question—from the appointment of commissions to the creation of forestry schools.

With all of this attempted legislation it would be, of course, a waste of time to attempt to deal. Some half dozen or so proposals, however, merit some slight consideration.

In 1876, for example, there was introduced a bill which represents the first attempt—not counting the naval reservations—to create genuine national forests in America. Its title—"For the preservation of the forests of the national domain adjacent to the sources of the navigable rivers and other streams of the United States"[45]—is very well worth bearing in mind for comparison with a measure that was actually passed thirty-five years later. This bill proposed the setting aside and preservation of all public timber lands "adjacent to sources and affluents of all rivers" in order to prevent those rivers becoming "scant of water." It antedated by a few months the coming into office of Dr. Hough,

[45] 44 Cong. 1 sess., H. R. 2075.

and bears some evidence of being inspired by the Vienna experiences of Dr. Warder.

A bill introduced January 28, 1878, by Senator Plumb, of Kansas,[46] and said to have been the work of Schurz and Williamson, went very much further, and was in fact a thoroughgoing forestry measure. It provided for the withdrawal of all timbered lands from settlement, and for their administration and protection by a forester and a corps of assistants, who were empowered to sell timber as needed under careful cutting restrictions that would preclude destructive denudation. It provided also for the sale of agricultural lands in the timbered areas reserved, at a price that would cover timber as well as land. It prescribed penalties for setting fires, and provided that suits for trespasses committed on the public lands, save those reserved for naval purposes, should be brought by the Secretary of the Interior. This last provision, amounting to an amendment of R. S. 4751, had been strongly urged by Secretary Schurz in his 1877 report.[47]

After the failure of the 1878 proposal to establish forest reservations there were brought forward during the ensuing decade a considerable number of bills advancing substantially similar plans. Only one need concern us. This was a bill presented in January, 1888, by Senator Hale, of Maine, at the request of the American Forestry Congress,[48] and with the endorsements of many prominent citizens and organizations. This bill, said to have been formulated by Dr. Fernow, provided for the establishment and management of forest reservations under a commissioner of forests in the Department of the Interior. The proposal aroused no enthusiasm but it did stir up some resentment, and that, rather curiously, on the part of the same Senator Plumb who had sponsored Schurz's bill in 1878. Protesting against the reference of the

[46] 45 Cong. 2 sess., S. R. 609.

[47] P. 18. R. S. 4751, which was Section 3 of the act of 1831, providing for the bringing of all timber trespass suits under the direction of the Secretary of the Navy, and which created a very anomalous situation with most of the timber lands under the jurisdiction of the Secretary of the Interior, was, nevertheless, substantially amended, and along the lines desired, in 1878 by the acts of April 30 (20 Stat. L., 46), and June 3 (20 Stat. L., 88). It was finally repealed by the act of August 4, 1892 (27 Stat. L., 348). See U. S. Comp. Stats., Secs. 4986, 4987, 4988, 4671.

[48] 50 Cong. 1 sess., S. 1476 and S. 1779. Under the bill as first submitted the commissioner was to hold office during good behavior and was to have the appointment of four assistants.

bill to the Committee on Agriculture and Forestry, and declaring that forest protection to be effectual would always have to be looked to under the direction of the Secretary of the Interior through the medium of the General Land Office, the Senator went on to say that:

I think it will be found that a good deal of the zeal of the people whom the Senator has mentioned . . . will be found to grow out of a desire to have a commission entirely apart from all the Departments of the Government and having independent authority of its own.[49]

The law of 1891 was a somewhat belated development out of the turmoil resulting from the vigorous enforcement campaign instituted by Schurz and Williamson. The noise in the world caused by that unprecedented exhibition of frightfulness impelled Congress to do more than pass laws "to license timber thieves." It brought about the inclusion, in the sundry civil appropriation act of March 3, 1879 (20 Stat. L., 377, 394), of legislation providing for a study of the entire public land question by a special commission known as the Public Lands Commission.[50] This commission reported early in the following year, and submitted a proposed act covering every phase of the public land administration and disposal.[51] Its timber land sections provided for the withdrawal from sale or other disposal of all timber lands; the sale of public land timber for commercial purposes, and its free use under certain conditions; the administration of the public timber lands by the Commissioner of the General Land Office; and prescribed penalties for timber spoliation practically similar to those already existing in the old naval statutes.[52] A paragraph was also included providing for legal action under the direction of the Secretary of the Interior, who was also given authority to "compromise" similar to that given the Secretary of the Navy in the old act of 1831. Finally, it was proposed to "condone and quash" all civil and criminal actions then pending for timber stealing, a thing that, as

[49] Cong. Record, 50 Cong. 1 sess., January 30, 1888, p. 787.

[50] Consisting of the Commissioner of the General Land Office, the Director of the Geological Survey, and three civilians appointed by the President.

[51] 46 Cong. 2 sess., H. ex. doc. 46.

[52] Secs. 2460-2463 and 4751, Rev. Stats. These the Commission specifically declared were not to be repealed by the proposed new act. The new land was to be of "general application" as distinguished from the old.

we have seen, was actually accomplished that same year by the act of June 15 (21 Stat. L., 237).

The real gist of these recommendations, as of all the efforts, both civic and legislative, of the eighties was an aiming at one principal object—the withdrawal of all timber lands from disposal of any sort, or, as an alternative, the setting aside of portions of them as reserves. The exhaustive report of Inspector Bowers, of the Public Lands Service to the Secretary of the Interior, in 1887, stresses this point.[53] So did Schurz in his aforementioned 1889 speech to the Forestry Congress in Philadelphia.[54] That the first great objective was seen to be some form of definitely reserved forest is very plain.

But with that one exception of the condoning act there were no immediate legislative results of the labors of Public Lands Commission.[55] Nevertheless, in every succeeding Congress a revision of the land laws along lines at least approximating the Commission's recommendations was given some consideration. Nor was civic urging to that effect lacking.[56] Action was finally taken in the act of 1891, which, in its main sections, accomplished the repeal of the timber culture law and its amendments, and also of the preemption law; amended the homestead[57] and desert land laws with a view to making them more fraud-proof, and abolished public sales of government lands. It established the permit cutting system. It also—and herein lies its great importance so far as we

[53] 50 Cong. 1 sess., H. doc. 242.

[54] *Forest Leaves*, I, 120. The rather novel suggestion was also advanced at this meeting that all forests lands could be reserved under the irrigation appropriation sections of the sundry civil act of October 2, 1888 (25 Stat. L., 505, 527). But the idea was far-fetched, and nothing came of it.

[55] It is principally remembered nowadays for its voluminous history of the public domain written by Thomas Donaldson, one of the civilian commissioners. This was published in a later and detailed report of the Commission as Part 4 of H. misc. doc. 45, 47 Cong. 2 sess; also as Part 4 of H. ex. doc. 47, 46 Cong. 3 sess. Part one of this latter document is a codification of the then-existing land laws by A. T. Britton, another one of the civilian commissioners.

[56] President Harrison transmitted to Congress with a special message, on January 20, 1890, another memorial from the American Association for the Advancement of Science, urging a thorough study of the forest situation by an expert commission and the withdrawal of all forests lands from sale or entry pending its completion. 51 Cong. 1 sess., S. ex. doc. 36.

[57] By making commutation possible only after fourteen months' residence and cultivation

are concerned—provided, by the insertion of Section 24 at the eleventh hour of the bill's consideration, for the setting aside of forest reservations by the President at will. The King's Forest was back to stay.

Most of the credit for the inclusion of this potent section is usually given to the American Forestry Association;[58] which is entirely proper, provided one bears in mind that at that time Dr. Fernow was the American Forestry Association.

Early in the following autumn President Harrison made the first exercise of executive privilege under this act, proclaiming, in September, the Yellowstone National Park Timber Land Reserve in Wyoming, and the White River Plateau Timber Land Reserve in Colorado the month following. The combined area of these reserves was 2,437,120 acres. By September, 1893, there had been set aside by Presidents Harrison and Cleveland, a total of over seventeen and a half millions of acres, which did not include the more than three million acres which lay within the borders of Yellowstone, Yosemite, Sequoia, and General Grant national parks.[59]

Impressive a step forward as was this definite adoption, as a national policy, of the King's Forest and the Broad Arrow—for that is precisely what it amounted to in inmost fact—the reserved forest areas were little better off than they had been before. They could not be alienated *en bloc* into the hands of speculators, it is true, by virtue of the timber and stone law or some similar legislative botchery; but as regards plain thievery and the ravages of fire and unrestricted grazing they were as vulnerable as they had been before. And the unreserved forests by virtue of the crude permit feature of the 1891 act were opened wider to speculative activities.

[58] The new name of the American Forestry Congress, adopted at the 1889 Philadelphia convention.

[59] Although the 1891 law was the first law authorizing the setting-aside of true forest reservations; and despite the fact that the reservation made thereunder by President Harrison in September of that year was the first real forest reservation, it must be borne in mind that a law passed five months earlier (Act of October 1, 1890) for the purpose of setting-aside Yosemite and General Grant national parks erroneously proclaims itself to be a law to set aside "forest reservations." It should also be borne in mind that for many years it had been customary to set aside small forest tracts in the vicinity of western garrisons for the supplying of fuel—a species of military wood lot.

To remedy this situation effort was not lacking, but six years elapsed before it met with success. Of this effort bills introduced by Representative McRae of Arkansas[60] and Senator Paddock of Nebraska[61] were the outstanding features in the way of attempted legislation. Both were comprehensive forestry measures, and the Paddock bill was advocated by the American Forestry Association. Both were also strongly recommended by the Secretary of the Interior in his report for 1895.[62]

Besides making provisions for protective administration by the Secretary of the Interior, regulated sale of timber apart from the land, and restoration to entry of lands primarily valuable for agriculture, the McRae bill recalled the old live-oak law of 1822 by providing for the use of the military arm for the warding off of thievery, grazing, etc., on the proposed reserves. This use of the army was given much consideration in forestry circles at that time, some of its proponents, notably Professor Sargent, going so far as to advocate a definite system of army forest control based on forestry courses in the West Point curriculum, supplemented by practical work in the woods. The American Association for the Advancement of Science endorsed this idea, as did several prominent men of the day, including John Muir. The leaders of the forestry movement, however, failed to enthuse, apparently believing that forestry was too jealous a mistress to tolerate even a slight martial interest in its devotees. The idea was never seriously considered in Congress.[63]

Legislative effort coming to nothing, the American Forestry Association in 1896 asked Secretary of the Interior Hoke Smith to request the National Academy of Sciences, the legally constituted adviser of the government in scientific matters, to investigate the entire forestry question and report "upon the inauguration of a rational forest policy for the forested lands of the United States." Suggestions were also asked as to specific legislation designed to remedy existing evils.

[60] 53 Cong. 1 sess., H. R. 119.
[61] 52 Cong. 1 sess., S. 3235.
[62] Pp. 23, 24.
[63] Carl Schurz had looked favorably upon a scheme of permanent forest protection by the army along somewhat different lines—the creation and training of special forest troops something like the forest engineers in the World War.

The Academy responded very promptly by the appointment of a commission, which began its work in July, 1896, and submitted its report on the first of the following May. It recommended substantially the things called for in the McRae bill. The forests were to be administered by a forestry bureau under the Department of the Interior, and pending its formation the use of the army was recommended.[64] In the meantime, however, Professor Sargent, the chairman of the commission, in a letter to President Gibbs, of the Academy of Sciences, in February, 1897, urged the creation forthwith of thirteen additional reserves with a total area of more than twenty-one million acres. President Cleveland proclaimed these additional reserves, as requested, late the same month, an action that stirred up a veritable hornets' nest of opposition throughout the West, from which section of the country the greater part of the opposition to the McRae bill had emanated, and which threatened for a time to destroy the entire reserves idea.[65] Western opposition, indeed, constituted the bulk of the anti-forestry sentiment of the day. There were many reasons for this Western sentiment. For one thing the pioneer spirit was stronger in the West than in the older parts of the country. As a consequence, adherence to the inexhaustible theory was still strong. Then the West was strong for "development," and feared forest reservations would hamper it.[66] The West felt that the Western forests belonged to the West rather than to the country as a whole, just as colonial New England had felt that its right to the mast trees was superior to the right of the Empire as a whole. It got to be very sensitive over so-called Eastern dictation. Finally, lumber, railroad, and mining interests, powerful in that part of the country at the time, feared that their several businesses would be injured if too careful a national forestry policy were adopted.

There nevertheless emerged from the hubbub, as a part of the 1897 law above referred to, the definite enactment of the main

[64] 55 Cong. 1 sess., S. doc. 105.

[65] This action of President Cleveland, taken, it would seem, without consulting, or even notifying, the representatives of the states affected, was unquestionably somewhat precipitate. It was deplored by Fernow and others, who realized its unfortunate psychological possibilities as an argument against the reservation policy.

[66] "Those in the West are afraid of interference in local concerns."—See article by Fred H. Newell, Chief Hydrographer of the U. S. Geological Survey, in the *National Geographic Magazine* for June, 1897.

features of the McRae bill as well as those of the legislation long striven for by the American Forestry Association. The legislative foundation was laid for the establishment, in the Department of the Interior, of a protective and administrative organization for the forest reserves created under the act of 1891.

This important enactment was, like the forestry section of the 1891 law, a sort of a tail-to-a-kite affair. The 1897 law proper was an appropriation act—sundry civil for 1898—and its forest sections were provisos appended to an appropriation for the surveying of the new reserves by the Geological Survey. While only one of them, the one making possible the administration and protection of the reserves, is of outstanding interest to us here, it will not be amiss to note certain of the others.

The law specifically reaffirmed, for one thing, the power of the President to create reserves under Section 24, of the act of 1891. For another, it provided that no reserves should be created thereafter except for certain specified purposes, one of which was the "securing of favorable conditions of water flows." For another—and this the most important of all—it provided for the regulated utilization of the reserved forests. It was also stipulated that the extensive reservations made by President Cleveland in the preceding February were not to take effect for nine months after the passage of the law.[67]

This last proviso is not without significance in connection with one of the law's unfortunate features. The law on the whole was not a bad one, but there were two features introduced, designedly or accidentally, which were unfortunate. Of these, by far the worst was the so-called "forest-lieu" clause, which was supposed to be intended for the relief of settlers, who found their homesteads closed in a forest reservation, by enabling them to trade it for another one in the unreserved public domain outside.[68] As a practical matter it operated to set going a wholesale swapping of worthless railroad grants and denuded timber lands for valuable unreserved tracts elsewhere on the public domain. The value of the

[67] That is, not until March 1, 1898.

[68] In which category the new reservations of President Cleveland were to be for nine months. That is to say, a nine months' open season on these reserves was to be enjoyed before they were reserved in fact.

nine months proviso in this operation can be better imagined than described.[69]

The other criticizable feature of the law was the non-export clause forbidding the shipping of lumber from the reserves out of the state of origin. Designed to protect the individual states, it overlooked the fact that many of them used so little timber that quantities of ripe or accidentally killed trees, badly needed elsewhere, were lost for want of a market.

The administration and protection of the forests was not, however, to be instituted at once. The law making that institution possible carried no funds to make it certain; and it was not till the sundry civil appropriation act of July 1, 1898 (30 Stat. L., 618), appropriated $75,000 to that end that an actual start[70] could be made in America in actual forest management by the nation. And, as we shall see later, time was to elapse even then before that management could deservedly be called "actual."

But a great gain had been made, nevertheless. The King's Forest idea was back, and back to stay, and no revolution had resulted. The very fact testified to the inroads that had been made in "Inexhaustibility," as did the further fact that there was now officially set up, as a regular part of the governmental machinery, a force dedicated to the business of the "eating out of substance." True, the special agent system of Schurz and Williamson can be said to have antedated this force; and that system was still in existence. The very law of 1897 which made the organized handling of the reserves possible had appropriated $90,000 for the special agents for "protecting timber on the public lands." But there was a vast difference in the thought back of the two systems. One was a mere watchmanship more or less frankly recognized as a forlorn hope. The other was a stewardship of a resource which it was proposed to make permanent by scientific utilization.

But let the reader again be reminded that the Division of Forestry in the Department of Agriculture was still without forests. With this new arrangement it had nothing to do. That was exclusively under the Department of the Interior. Nevertheless,

[69] But fears that the nine months would be utilized to bring about a change in the boundaries of the proposed reservations proved to be groundless.—*The Forester*, April, 1898, p. 71.

[70] Some preliminary work was done, however, by means of the appropriation for timber agents.

an advance had been made over the conditions in 1876 and 1891. First there had been forestry but no forests. Then there was forestry without forests, and vice versa. Now there was to be forestry without forests, and forests with a touch of forestry. And this takes no account of the forest work of the General Land Office special agents, or of that of the Geological Survey, to which we shall advert later.

The passage of the 1897 law was the last considerable achievement in which Dr. Fernow had a hand during his connection with the Forestry Division. At the close of the following fiscal year, he resigned to take up the work of organizing the first forest school in America, to the establishment of which, at Cornell University, we have already referred. He directed this school until 1903, then retiring to private consultative work in New York, during which period he also delivered some forestry lectures at Yale and organized the forest school of the Pennsylvania State College. In 1907 he organized the first forest school in Canada, at the University of Toronto, and directed it till his retirement in 1920 as Professor Emeritus of Forestry. Cornell, in 1922, named its forestry building Fernow Hall in his honor. He died in Toronto, February 6, 1923. The year before his retirement from the Division of Forestry, he received the degree of LL. D. from the University of Wisconsin.

These details are given because Dr. Fernow was not only the true pioneer of American forestry but the man who established it on a firm and enduring foundation by hard work and sane work during its critical years. He planted the tree and tended it till it had taken vigorous root. Those who have come after him have only had to watch it grow. The undoubted fact that "experience and necessity" would have brought about the beginnings of a national forest policy had Dr. Fernow never existed, does not detract from the credit due him. His effective work from 1882 to 1898 as the real directing power of the American Forestry Association hastened, by at least several years, the definite taking thought by America as a nation with regard to a possible timber-scanty morrow.

The pioneer feature in Fernow's career is most striking. Everywhere he was among the trail blazers—at Cincinnati, at Washington, at Ithaca, at Toronto. And with this there has coincided, as

we have seen, a sympathetic understanding of pioneer influences upon America's forest problem.

His career was also characterized by a balance that kept the forestry movement on an even keel during its formative years midway between the sentimentalities of those to whom Fernow used to refer as his "Arbor Day friends" on the one hand, and the extravagances of the cryer of "denudatic" on the other.[71]

Dr. Fernow's last work for the Forestry Division was completed after his connection with it had been terminated. The Agriculture Department appropriation act of March 22, 1898 (30 Stat. L., 334), requiring a report upon the forestry work of the department performed up to that time, the preparation thereof necessarily devolved upon Dr. Fernow, who had been the work's most recent director. The rather formidable volume[72] which he submitted in December, 1898, in fulfillment of this duty covers the required ground comprehensively, but is chiefly notable to-day for a curious misstatement which has been repeated so widely as to have acquired respectable standing. Whoever started the absurd fiction that the word forestry did not even appear in the American dictionaries in 1876 will probably never be known. That the usually careful Fernow should have swallowed the statement whole and repeated it, is somewhat curious,[73] and decidedly not in keeping with the common sense of his oft-reiterated declaration to his "Arbor Day friends" that "the axe is the true preserver of the forest."

An interesting sidelight touching the effective way in which Dr. Fernow was preaching the gospel of forestry in the late eighties is to be found in no less a place than the pages of that arch-glorifier of adventure, Rudyard Kipling. At some time during that

[71] Writing in *The Forester* in 1898 (Vol. IV. p. 231) Dr. Fernow said: "The tree planters of the plains have for a long time clouded the issues of the forestry movement in the East and West by their gospel of arboriculture and arbor days; they have antagonized the lumbermen, the owners of our woodlands, without whose work they could not have settled the treeless plains and built their houses and barns, and thus they have retarded, unwittingly to be sure, the development of forestry."

[72] 55 Cong. 3 sess., H. doc. 181.

[73] The learned doctor not only did this in his report, pp. 12, 13, but earlier in 1898 as well, in an address to the Paper and Pulp Association. See *The Forester*, March, 1898, p. 54. The word "forestry," as a matter of fact, appears in Worcester's (Am. Ed.) as early as 1846, and in Webster's as early as 1867, being defined in each instance as "the art of forming or cultivating forests."

famous progress of his across America in 1889, in the record of which he so deeply affronted certain San Franciscans by his remarks concerning spittoons "generous as to gape," Mr. Kipling somewhere and somehow got enough of the propaganda to aver that

> The great American nation—which individually never shuts a door behind its noble self—very seldom attempts to put back anything that it has taken from nature's shelves. It grabs all it can and moves on. But the moving on is nearly finished and the grabbing must stop; and then the federal government will have to establish a Woods and Forests Department the like of which was never seen in the world before. And all the people who have been accustomed to hack, mangle, and burn timber as they please will object, with shouts and protestations, to these infringements of their "rights."[74]

A true enough picture as we all know, from the Pascataquacke to the Manistee, and beyond. True, that is, as to bald physical actualities. But why, in this particular instance does Mr. Kipling ignore the real spirit behind it all—a spirit which he has done more than any man living to glorify? Were it not for the fact that he handsomely, though perhaps unconsciously, atones later on, one might almost be attempted to accuse him of a lingering "irritation" over the flouting of the Broad Arrow of Britain in old New Hampshire days.

And in the very year in which the author of "The Explorer" and "The Voortrekker" was thus lampooning borderism, there was put into print a list of members of the American Forestry Congress, from which the following is an excerpt:

LIFE MEMBERS

Cleveland Abbe, Wash., D. C.
* * * *
B. E. Fernow, Wash., D. C.
* * * *
Gov. J. Sterling Morton, Nebraska City, Neb.
* * * *
Frederick Law Olmstead, Brookline, Mass.
* * * *

[74] From Sea to Sea, II, 250. Kipling also rather echoes Dr. Schoepf when he speaks of America as "this big, slashing colt of a nation . . . off with a flying start . . . being pulled back to the ruck by that very mutton-fisted jockey Necessity."

ANNUAL MEMBERS

* * * *

Gifford Pinchot, Yale College, New Haven.[75]

* * * *

A listing not devoid of significance when considered in connection with the following words of Dr. Fernow in an article he wrote just one year later on "Forestry Education in the United States":

I am pleased to be able to state that the first American student of Forestry has begun his studies at the Forest Academy of Nancy, France—a native of Pennsylvania and a graduate of Yale. He consulted me, following my recommendation, and is now, after half a year's trial, thoroughly convinced of the wisdom of his move. The only mistake was, that he knew almost nothing of American forest conditions, and but little of the fundamental natural sciences; the latter, however, he will as readily learn there, and on his return he will quickly be able to acquaint himself with our peculiar conditions.[76]

The year 1890 must be mentioned for another reason, one having less to do with forestry, in truth, than with the gayety of nations, but by the solemn law of the land, nevertheless, an official adjunct of forestry for the fiscal years 1891 and 1892. The forestry appropriations for those years made it incumbent upon Dr. Fernow to spend part of his allotted fund in rain-making experiments, the results being that there sprang up all over the country a mushroom crop of "professors," each one possessing a plan bound to produce precipitation and each one entirely willing to sell the same. A senator from Illinois is said to have been responsible for this attempt at governmental operation of the heavens.[77] Why it was wished upon the Forestry Division, it would be hard to say, Dr. Fernow protested the assignment in vain; and his suggestions that the War Department or the Signal Corps were better fitted to bombard the skies went unheeded.

[75] *Forest Leaves,* II, 19, 20 (February, 1889).

[76] *Forest Leaves,* III, No. 2, June, 1890. The general argument in this article was against the establishment of American forest schools, for which Fernow maintained the time was not ripe. Instead, he believed, students should be sent to Europe to imbibe the spirit of forestry.

[77] *New York Tribune,* January 3, 1892.

For two years, therefore, the experiments went on, through the medium of hired "professors," while the newspapers ran the gamut of ridicule.[78] Finally, in the fall of 1892, the "professors" let off a series of such violent charges one night at Fort Myer, Virginia, just across the Potomac from Washington, that glass was broken in that city and the slumber of sundry official personages was rudely interrupted.[79] That ended Dr. Fernow's troubles. The experiments were discontinued. And the Doctor, thereafter, in referring to a certain type of forestry enthusiast, used the expression "meteorological expert" even more witheringly than "Arbor Day friend."[80]

But real forestry history, nevertheless, was very much in the making in those days in the early nineties. By 1893 Dr. Fernow's "first American student of forestry" had returned from his period of European imbibation and had entered upon his duties as forester of the Biltmore estate in North Carolina—said to have been the first practical application of forest management on a large scale in America.[81]

In that same year the Doctor's disagreement with Henry Gannett acquired sufficient acrimony to be classed as a controversy, the Doctor accusing his opponent of trying to discredit the work of the Forestry Division, and averring that his statements were unworthy of an attempt at serious refutation.[82]

As to Gannett's immediate retort to this, if any be made, the writer is not informed. It is interesting to note, however, that five years later he was still militant on the other side of the argument. Declaring that little real positive knowledge of the real area or content of American forests existed, he went on to say that

[78] The *New York Tribune* for March 15, 1891, declared that Congress was aware that nothing was so sure to produce rain as Sunday-School picnics, but because of their expensiveness and inconvenience had concluded to seek some simpler method.

[79] *New York Tribune* for November 4, and 21, 1892.

[80] At pp. 227-35 of the Annual Report of the Secretary of Agriculture for 1893 Dr. Fernow gives an entirely serious and very interesting discussion of the entire question of artificial rainfall. As recently as 1921 another epidemic of "rainmaking" swept over the western United States and Canada.

[81] *Forest Leaves*, IV, No. 6, December, 1893.

[82] *Forest Leaves*, IV, 34, June, 1893. See also, Secretary of Agriculture, Annual Report, 1893, pp. 313-15.

In view of the agitation for the protection of our forests which has been going on for at least a generation, and which has reached such intensity that it has become with many persons almost a religion, it is strange that there should be practically no knowledge to serve as a basis for such a cult.[83]

Later on he argues very convincingly from Sargent's own figures that he (Sargent) was considerably "off" on the underestimation side in his computation of the 1880 timber stand.

The year 1895 marked the beginning of coöperative work along forestry lines with other units of the Department of Agriculture, provision being made in that year for the inauguration, by the Division of Ornithology and Mammalogy,[84] of investigation of the food habits of American birds and animals as regarded "forestry."

Before passing on from our consideration of this period in which the beginnings of formal recognition were made it remains to glance briefly at that other branch of the forest stream which we left to follow the course of Dr. Hough and his successors; that is to say, the timbered section of the public domain. And first a word as to the legislative developments of the time with especial regard thereto, leaving out of consideration laws more nearly related to the work of the new division, such as the timber culture law; disregarding also those acts in aid of public improvements and education whose effect upon the forest situation we have noticed elsewhere.

At the coming-in of Schurz, the naval acts were the only laws providing for the protection of the public domain timber except

[83] The Forests of the United States, by Henry Gannett. From Part V (Forest Reserves) of Annual Report of the Geological Survey, 1898, pp. 1, 2, 18. A review of this work of Gannett's, by Gifford Pinchot, appearing at pp. 369-72 of the *National Geographic Magazine* for September, 1900, praises it unstintedly. Sargent's Tenth Census work, says Mr. Pinchot, was "monumental," but inaccurate, and everything since then he declared "mere guesswork." But Gannett's work he declared to be based on a "complete compilation of existing facts" and to be "a body of facts altogether without parallel." Garnett's views *re* the timber situation were also quoted in the November, 1900, issue of the Monthly Summary of Commerce and Finance of the Bureau of Statistics of the Treasury Department, pp. 1164, 1165, to the general effect that while annual timber increment exceeded annual cut, it was probably exceeded by the total of cut plus other forms of wastage, such as fire, etc. He argued from this that the reduction of wastage—apart from cut—to a minimum would probably insure a continuous lumber supply.

[84] Now the Bureau of Biological Survey.

for an act passed March 3, 1859 (11 Stat. L., 408),[85] which was practically a reiteration in somewhat more general language of the trespass section of the old naval statute of 1831. In the revision of the statutes in 1878 this law became Section 5388, R. S., and we shall have occasion to see it again.

Of laws in existence at that same time which were capable of being manipulated for the obtaining of timber, there were, first and foremost, of course, the preemption law and the homestead law. Then came the desert land act, the passage of which was practically synonymous with Schurz's assumption of office. The year later came the three laws passed, one on April 30,[86] and the others on June 3, 1878,[87] as the culmination of efforts which had been in the making for several years, looking to the devisement of some method by which Western agricultural and mining interests might obtain timber without being put to the necessity of stealing it;[88] which efforts were tremendously stimulated by the aforementioned activities of Schurz and Williamson.[89] The scope of these two laws of June 3, 1878, was later, as we have seen already, considerably enlarged, the free timber act by Section 8 of the all-important act of March 3, 1891, as amended by the act passed the same day for that specific purpose (26 Stat. L., 1903);[90] the timber and stone act by the act of August 4, 1892 (27 Stat. L., 348), extending its provisions to all public land states. When Fernow went out of office in 1898, the legislative situation with regard to the procurement of public timber was as outlined, save for the changes made by the act of 1897 which provided administration for the forest reserves.

[85] An act passed March 3, 1875 (18 Stat. L., 481), providing penalties for the injuring of trees on lands reserved by the United States for public purposes need not concern us. It did not apply to the public domain. See 43 Cong. 1 sess., S. 524; S. Jour., p. 217.

[86] 20 Stat. L., 46.

[87] The free timber act and the timber and stone act, both enacted the same day (20 Stat. L., 88; 20 Stat. L., 89). For an interesting résumé of the skulduggery practiced under the timber and stone act and the homestead act, see Conservation Commission of 1909, Report, III, 387. 60 Cong., S. doc. 676.

[88] *Cf.* 43 Cong. 1 sess., S. 471; 43 Cong. 2 sess., S. 1136; 44 Cong. 1 sess., S. 6; 44 Cong. 1 sess., S. 423; 44 Cong., 2 sess., S. 1078.

[89] 45 Cong. 1 sess., S. 123; 45 Cong. 2 sess., S. 481; 45 Cong., 2 sess., S. 926; 45 Cong. 2 sess., S. 967; 45 Cong. 2 sess., S. Jour., p. 334.

[90] The act of Feb. 2, 1893 (27 Stat. L., 444), extended the free timber privileges to New Mexico and Arizona; that of March 3, 1901 (31 Stat. L., 1436), to California, Oregon, and Washington.

The system of protection by special agents instituted by Schurz and Williamson was continued throughout the period under consideration. In fact it has continued without interruption to this day. Its greater measure of results as compared with those attained under the old "instanter" system of Hendricks, we have already noticed. Appropriations for this work were gradually increased. From the appropriation of $12,500 for 1877, there was a jump in the second year following to $25,000; in 1880 the figure mounted to $40,000. The tendency from then on to 1898 was in the direction of growth, $110,000 being appropriated that year.[91]

But though the success of the system as compared with the one it succeeded was fair enough, it does not seem, in its earlier years at any rate, to have bulked especially large against the system it was combating. Commissioner McFarland declared in 1881 and 1882 that there were not agents enough by half to give the public timber real protection,[92] a view which would seem to have been concurred in by the Supreme Court, which declared, in a decision rendered December 18, 1882, that "the government had no adequate defense" against timber stealing.[93] Bowers was equally pessimistic in 1887[94] and again in 1891.[95] A memorial presented to President Harrison by the American Forestry Congress in 1889 contains a résumé of the efforts at suppression for the years 1881-1887 inclusive, from which it would appear that there was unlawfully taken during that period timber to a value of upward of $36,000,000, as compared with a total recovery value of some $475,000 resulting from the protection afforded by appropriations totalling $455,000.[96] Figures given in the report on the proposed Paddock bill in 1892[97] for the period 1881-1891 indicate substantially the same ratio.[98]

[91] But see H. ex. doc. 190, 51 Cong. 1 sess., setting forth the inadequacy of the appropriations (in 1890) for the task to be performed.

[92] There were fifteen at that time.—General Land Office, Annual Report, 1881, p. 370. By September, 1883, the number had grown to thirty-eight. See Donaldson, Public domain, pp. 1052-88.

[93] Bolles Wooden Ware Co. v. United States, 106 U. S. 432.

[94] 50 Cong. 1 sess., H. ex. doc. 144; 50 Cong., 1 sess., H. doc. 242.

[95] "Twenty-five men can hardly be expected to protect 70,000,000 acres."—*Forest Leaves*, June, 1891.

[96] *Forest Leaves*, II, 58-60, May, 1889.

[97] 52 Cong. 1 sess., S. 3235.

[98] $54,000,000 lost; $1,000,000 recovered; $780,000 expended in protective service; an average of 25 agents employed. See also the *Century* for September, 1893.

Altogether apart, too, from the inadequacy of the protective force, as regarded numbers, to the task confronting it, there were further obstacles in the shape of local lack of sympathy—where there was not open hostility—and the blight of politics. Many of the earlier agents would appear to have been of the same type as the live-oak guardians of the seventies. With more abundant appropriations, however, and the greater ability gradually bred of experience a slightly mounting improvement is to be noted toward the late nineties. When Dr. Fernow retired in 1898, the standard of protection was still far from adequate. But it was also more effective than at any time since Broad Arrow days.[99]

[99] In connection with this statement, it is to be remembered that there was not so much accessible—and therefore readily stealable—timber to protect; the Western country was more "settled-up," and "experience and necessity" twenty years ahead of where they had been at the advent of Schurz.

CHAPTER IX

THE ERA OF MAGNIFICENT INDIGNATION

Dr. Fernow, in presenting his post-official report of 1898 to the Secretary of Agriculture, took occasion to speak of the future work of the Forestry Division. Said he:

> The time has come when it should have charge of the public timber lands, and especially the public forest reservations, which will never answer their purpose until controlled by systematic management, such as all other civilized nations apply to their forest property.

This consummation was destined to materialize seven years later, under the forest administration of that first American student of forestry, of whose Fernow-inspired pilgrimage to Nancy we have read hitherto.

When Gifford Pinchot assumed control of the Forestry Division in 1898, however, he had more behind him than a mere school training in a European forest school. Besides his work at Biltmore, which we have already noticed, he had had experience as a member of the 1896 commission of the National Academy of Sciences which had given him practical personal contact with the American forest situation. Having travelled somewhat extensively throughout the timbered regions of the West in connection with that work, and for about a year before being called to the headship of the Division, as a special forest agent of the Department of the Interior, he had got into direct touch with the conditions on the forest reserves.

His career as head of the Forestry unit falls into two periods. During the first seven years, or up to 1905, the old condition of a forestry organization without forests continued. The work was, in consequence, a continuation, along somewhat different lines, of the work done by Fernow. In 1905, however, forestry came into its own with the transference of the forest reserves to the jurisdiction of the Department of Agriculture; and a radical change both in the scope and nature of activities ensued. But before con-

sidering these two periods it will be well to notice briefly the forestry organization within the Department of the Interior which had been established therein in compliance with the law of 1897 providing for the protection and administration of the reserves.

As soon as possible after 1898 appropriations enabled him to do so, the Commissioner of the General Land Office, acting for the Secretary of the Interior, organized and set to work a force charged with the carrying out of the new law. He had issued rules and regulations for the governing of the reserves a year earlier—June 30, 1897—in which he made it plain that, while the reserves had been created for the protecting of the timber and the conserving of the water supply, the people were still free to take timber from them, graze their stock on them, or make any legitimate use of them, provided they did so under proper regulations that would have regard to the future as well as the present.

The reserves were divided into eleven districts, under as many forest superintendents. Under each superintendent were a number of forest supervisors, each in charge of a reservation and of a number of forest rangers for patrol work and general protective measures; besides supervising the cutting and removal of timber which had been designated for sale, allotting grazing privileges, regulating the movements of stock, etc.

The Commissioner at first did this work through the instrumentality of the so-called Special Service Division. But this method soon proved to be unsatisfactory. In general the lack of professional direction was felt. More specifically, considerable of a mess developed in the handling of the Black Hills reserves, and so much noise was made about it, journalistically and otherwise, that Secretary of the Interior Hitchcock felt impelled in self-defense to request of the head of the Forestry Division of the Department of Agriculture the loan of a trained forester to straighten matters out. Such a man was accordingly sent to the Black Hills region by Mr. Pinchot in the fall of 1901 and remained there till February in the following year. During this period he framed the first formal timber sale contract (with the Homestake Mine) made by government in America for timber to be taken from a reserved forest

area.[1] After completing his work in the Black Hills region he continued on detached service for a year or more by acting as a special inspector of forest reserves in other parts of the country; reporting, during the continuance of this work, directly to the Secretary of the Interior.

That gentleman, meantime, had determined to protect himself further from such incidents as the one referred to; and as a result the Forestry Division of the Department of the Interior was created in 1901, about the same time the loaned forester was sent to the Black Hills. The new division was placed in the charge of Filibert Roth, also a professional forester, who had been under Dr. Fernow in the old Forestry Division for several years. Three other trained foresters were appointed to act under him.

For a time under this new arrangement forest affairs in the Department of the Interior were handled in a much more satisfactory manner. The Division was fairly self-sufficient in a technical forestry sense and for a time had excellent coöperation with the older organization with regard to matters involving technical question of administration, grazing regulations, recommendations for new reserves and changes in old ones, etc. As originally organized, it continued—at least formally—to function until it passed out of existence in 1905. During the last two years of that period, however, practically all coöperation with the older division ceased. The then-Commissioner of the General Land Office became hostile to the arrangement—the said arrangement possessing, it must be conceded, rather delicate possibilities—and in the face of his opposition Roth and the balance of the professional personnel resigned in 1903.

That the passing of the new organization out of existence was seen to be among the probabilities some years before it occurred, is evidenced by the following utterance of Secretary Hitchcock:

[1] *Cf.* statement of Dunnell. The permits therein referred to were not connected with reserved areas of any sort, but only with the general public domain. Perhaps a nearer approach to the system inaugurated in the Black Hills was one that was utilized a number of times in the live-oak days when live-oak contractors in getting timber for the navy cut trees "by mistake" on reservations and were caught with the goods. Such incidents were adjusted by knocking an agreed upon sum, say twenty-five cents per cubic foot, off the contract price covering the amount of timber so mistakenly appropriated.

Forestry is properly an agricultural subject. The presence of properly trained foresters in the Agricultural Department, as well as the nature of the subject itself, makes the ultimate transfer, if found to be practicable, of the administration of the forest reserves to that Department essential to the best interests, both of the reserves and of the people who use them.[2]

Pinchot's first years, therefore, were hampered by this awkward situation—the real field of work in charge of a new, hastily recruited, and largely untrained organization, while the older service could only, under the law, play the part of a sort of glorified information bureau. But a way was found around that difficulty. The Fernow policy of concentration upon the wood users was abandoned for one centering the work of the Division about the practical forestry problems of the owners of woodlands. The course he proposed to steer was thus indicated in his 1898 report:

1. To introduce in practice better methods of handling forest lands of private owners including both wood lots and large areas chiefly held for lumber, and afterwards to spread a knowledge of what has been accomplished;
2. To assist the Western farmer to plant better trees in better ways;
3. To reduce the loss from forest fires;
4. To inform our citizens regarding opportunities for forest enterprises in Alaska, Cuba, and Porto Rico.

This change of policy was impelled by two principal reasons. In the first place Pinchot foresaw the inevitability of the change in control of the reserves predicted by Secretary Hitchcock, and desired that his organization should be in shape to take hold without bungling when it came. In the second place, he considered that the greatest need for practical forestry lay where the title to the greatest amount of woodland resided; and the bulk of the forests, he very well knew, had passed into private ownership. His policy, he argued, should thus kill two birds with one stone by training his organization in practical forest administration and drawing private lumbering into conservational methods in the one operation.

Soon after taking office, therefore, he caused the offer of coöperation with expert advice and assistance to be made to the owners of private timber tracts, the difficulty about the use of public funds on private enterprises being got around by an arrangement under which

[2] Secretary of the Interior, Annual Report, 1901, p. 56.

the private owners of large tracts paid the expenses of the instructing agents. Service was given gratis to the small woodlot owner.[3]

This offer aroused considerable interest. "The Division is totally unable to meet the public demand upon it in this direction," wrote Pinchot in August, 1899. But though the interest continued for several years and a respectable number of so-called "working plans" was prepared by the Division for some of the large lumbermen and timber owners, the long-run success of the new venture cannot be said to have been notable, despite the enthusiastically optimistic note in Mr. Pinchot's 1899 utterance.

Very few of the plans were destined to "stick." Private owners willingly enough conceded their soundness as a matter of theory, but could not see their way to adopting them for economic reasons. The plans were ahead of their time.[4] The 900,000 acres of private timber lands in seven states that were being managed along approved forestry lines by 1905 and the applications for advice from owners contemplating forestry management that were on file for upwards of 2,000,000 acres more in the same year may be said to represent the high-water mark of a bit of generous, but impractical and imperfectly informed, enthusiasm. But the polite hearing accorded these plans is evidence of the extent of the passing of the "denudatic" spirit. The Secretary of Agriculture said in 1904 that the sentiment of lumbermen had changed from suspicion to support; that of the general public from indifference to interest.

Besides this work in behalf of the private owners some public work was done. For the Department of the Interior, working plans were drawn up for several of the reserves, beginning with the Black Hills Reserve in 1900; plans which were likewise somewhat ahead of their time.[5] Similar relationships with corresponding responsibilities were established with the War Department with

[3] Some woodland owners had voluntarily tried forest management during the last years of Fernow's régime as a result of the Doctor's propaganda. The operations were directed by the Division to some extent by correspondence, but no practical instruction on the ground was given.

[4] That is one way of looking at it. Another, and one based on excellent professional opinion, is that they were interesting regional silvicultural studies rather than plans, and were but seldom capable of being applied to American lumbering.

[5] It was said of them years later that "they never got off of paper and into practical operation in the woods."

its several wood and timber reservations,[6] and with the Philippine Forest Bureau, Pinchot visiting the Islands in 1902 and assisting in the preparation of the forest act promulgated by the Insular Civil Commission in May, 1904. Assistance was also given in the shape of working plans for the million and a quarter acres of state forest under the control of the Forest, Fish and Game Commission of New York; and for the timber tract at the West Point Military Academy.

Although it will involve a bit of a digression and, to some extent, a retracing of the course traversed in the last two chapters, it will be necessary to give, at this point, somewhat detailed consideration to the act passed on June 4, 1888 (25 Stat. L., 166). This no less by reason of the events leading up to it, than of other events, developing contemporaneously and subsequently which are intimately connected not only with the growth of Order in general, but, as we shall presently see, with the later development of our particular subject.

The gist of the act referred to was a specific extension of the provisions of Section 5388 of the Revised Statutes to lands included in Indian reservations. This section has been referred to above as the act of March 3, 1859 (11 Stat. L., 408). How the necessity for its broadening came about is a story not devoid of interest.

In what has been said above concerning the period of unchecked and prodigal forest exploitation no direct mention of Indian lands has been made. The theme has been handled broadly and as having to do with the public domain alone. In a general sense that is entirely fitting. The vast bulk of the raw material for the activities of the "damned thieves" was comprised within the great area of unsettled, unpatented public lands.

But not exclusively so. The Indian reservations contained a great deal of fine timber. To obtain this timber either directly by the "right of discovery" and the use of the strong arm, or indirectly through various forms of chicanery was not an operation presenting insuperable difficulties—either moral or physical—to

[6] Military woodlots would be a more accurate designation. They were limited and isolated tracts reserved from time to time to provide fuel supplies for western garrisons. There were eight such reservations in existence in 1923, with a total area in excess of 152,000 acres.

shrewd gentlemen in the vicinage who were not averse to "profiting by the occasion." America had promised the Indian that the reservation forests were to be his, and then permitted her citizens to make of the promise a mockery. Or perhaps it would be truer to say that she was unable to control her citizens—that Adventure was still in some respects a little too much for Order.

Yet Order was not entirely supine. When, in the late sixties and throughout the seventies complaints of reservation timber looting began to accumulate—notably of vast plunderings of immensely valuable stands of walnut timber in what was then the Indian Territory—some slight bestirments of the law are to be noted.[7] For example, government moved to repress the activities of one Reese, and chose Section 5388 as the medium therefor.

Mr. Reese had been engaged for many years, in common with many another reincarnated and transplated Dismal Borderer, in the presumably not unremunerative business of making free with Indian timber. As to that detail there was no argument. Yet Mr. Reese went unpunished.

Mr. Reese demurred. He had taken the timber, he hardily admitted, but what of it? Where was the offense? He was being proceeded against under Section 5388, and that section, he contended, touched not him or his larcenous pursuits. It applied only to "lands of the United States," whereas he had operated only upon lands of the Cherokee Nation, a view of the matter in which the court, after an exhaustive review of the treaties and laws in accordance with the Indian lands had been set aside, was reluctantly constrained to concur. In so concurring the court took occasion to point out that although the then-existing law did not protect the Indian lands the right to pass a law that would protect them belonged to Congress very clearly. The court also took occasion to say that

> the duty of Congress . . . to protect these Indians from unlawful intrusion from without and from violations of their rights by any and all persons is manifest.[8]

[7] Also of the lawmakers. For example, H. R. 1297, 44 Cong. 1 sess., introduced January 18, 1876, flatly prohibited the cutting of timber on Indian reservations. But it died an early parliamentary death. The public lands legislation recommended by the 1879 Public Lands Commission also prohibited Indian reservation plundering.—46 Cong. 2 sess., H. ex. doc. 46, p. lxxvii.

[8] United States v. Reese, 5 Dillon, 405; 46 Cong. 2 sess., S. misc. doc. 100.

To Mr. Reese and his sort the court referred by saying:

> There is a class of men on the borders of the Indian country, who revel in the idea that they have an inherent, natural right to steal from the Indians. This right is not to be questioned. They think it a tyrannical use of authority if they are interfered with.[9]

Of course they did. So had they ever. The Broad Arrow had been tyranny in New Hampshire. The Irish Apothecary and the truculent Thistle had incarnated it in Florida, as had later Mr. Ike Willard along the Manistee. So does Adventure regard Order: the ways of the frontier those of settled society.

Yet before settled society can be, the frontier must be. Order must control Adventure, nevertheless, or disintegrate in anarchy.

Of itself the episode of Mr. Reese is a small thing, of no importance. As a vivid—and a true—illustration of just what Order and Adventure mean; more particularly what they have meant to the Anglo-Saxon, who, by good luck or good management or both, has made them work together with less clatter than most, to his not inconsiderable behoof; and still more particularly what they have meant and still mean in the forest story of America—as an illustration of this sort, the case of Mr. Reese takes on all the glamour of a cause celèbre.

That it should have taken almost a decade for the court's pronouncement in this case, with regard to the duty of Congress, to sink sufficiently into the consciousness of that body to impel it to add the words, "or on Indian reservations," to the prohibited areas enumerated in Section 5388, was not due to any lack of reminding. A not exhaustive list of congressional documents bearing upon the matter includes four special messages by Presidents Arthur and Cleveland between 1882 and 1888[9] strongly urging the needed enlargement of the law. A report of the period did likewise.[10] Worth reading, also, is a correspondence between the War and Interior Departments, in 1882, relative to habits of inordinate wood wastage by troops in posts on Indian reservations, which seem to have been common at the time.[11]

[9] 47 Cong. 1 sess., S. ex. doc. 89; 48 Cong. 1 sess., H. ex. doc. 14; 49 Cong. 1 sess., S. ex. doc. 13; 50 Cong. 1 sess., S. ex. doc. 42.
[10] 47 Cong. 1 sess., S. rep. 392.
[11] 47 Cong. 1 sess., S. ex. doc. 161.

What finally operated to push the amendment over the brink seems to have been another Indian timber grievance, which, beginning to attract attention about the time of Mr. Reese's trial,[12] came to a head in the early part of 1888, the year the amendment was finally enacted, in an exhaustive investigation by a Senate committee into the matter of the Chippewa pine lands. Those desiring the detailed history of this matter can obtain it by exploring the thousand and more pages of testimony and exhibits which the committee brought forth.[13] This they can supplement with the special message, with accompanying documents, of President Harrison, under date of December 22, 1890,[14] upon the same subject.

The committee went to work in March, 1888. The volume representing its labors saw the light something over a year later. A musty Sahara with few oases, it by turns interests, depresses, disgusts, moves to sardonic mirth, and yet, withal, profoundly instructs. It is unexcelled as a document illustrative of how a situation may be turned to political advantage, of how parties, from motives of political strategy, may be no less ready to "profit by the occasion" than individuals from financial ones. One is moved to wonderment at times as to the why of the whole business—as to whether it was a real effort to right the wrongs of the Indian or merely a manœuver in the grand strategy of politics to saddle the responsibility for those wrongs upon the other party.

But in any event the document contains the high lights of the story of the Chippewas and Menominees of Wisconsin and Minnesota from about the time encroaching Adventure from the east began to hanker after their pine, somewhere around the early forties,[15] down through the days of magnificent plundering and the episode of Mr. Reese, to the period immediately preceding the beginning of the committee's investigation. The document also

[12] On July 27, 1877, a Chippewa Chief complained to an Indian Commissioner, as follows: "The whites are encroaching upon my reservation; they are stealing my timber." 45 Cong. 2 sess., S. ex. doc. 9, p. 1, sub. doc. 27 C., p. 37.

[13] 50 Cong. 2 sess., S. rep. 2710.

[14] 51 Cong. 2 sess., S. ex. doc. 23.

[15] 32 Cong. 1 sess., Cong. Globe, Appendix, p. 851. Estes, the timber agent referred to above, said in 1854 that a lumber business supported by public timber stealing had been carried on in the Chippewa and Menominee region for years.—33 Cong. 1 sess., H. ex. doc. 115; p. 8. See also 45 Cong. 2 sess., S. ex. doc. 9. pt. 1.

contains references to the most important legislation enacted during the period in question in response, or supposed response, to its developing exigencies.

Reference to this story would hardly be necessary but for the fact that foundation has to be laid for a development of a few years later that it would be out of the question to ignore.

The story itself is simply the old story of Mr. Reese told in a slightly different way. The westering Anglo-Saxon, led by Adventure, with Order in the main body, encounters the stone age in possession of undeveloped material resources that the creating race must have or perish. Ensues a welter of smashing and building, of senseless wasting and sane conserving, of fair-dealing and swindling, of chivalrous justice and brutal injustice—with justice acquiring gradually the upper hand.

What is now Wisconsin and Minnesota was the old country of the Chippewas and their kindred, the Menominees, a country which at one time contained probably the greatest stand of fine pine timber the world has ever seen. The treaties of 1842 (7 Stat. L., 591), and 1854 (10 Stat. L., 1109), for the former, and those of 1848 (9 Stat. L., 952), and 1854 (10 Stat. L., 1064), for the latter, restricted these people to reservations, and opened the greater part of their old territories to development. But with the passage of time the timber on the reservations proper came to be coveted, and scandals developed as a result thereof. These were based, it should be pointed out, not so much upon stealing as upon swindling. The Indian was not so much robbed as he was "done." His cupidity was appealed to—and taken advantage of.[16] Out of that touch of nature grew the investigation of 1888. By the terms of the old treaties the Indians were entitled, at a time to be determined later, to allotments of land in severalty. They began to clamor for these allotments early in the eighties. One of the things the committee was directed to look into was "the system under which Indians to whom lands have been allotted are allowed to sell the timber thereon."

As has been shown already the final extension of the provisions of Section 5388 to Indian reservations resulted from the turmoil over Indian affairs which eventuated in this investigation. So did

[16] Which suggests, somehow, the original purchase of Manhattan Island as related in the school books.

a considerable number of other acts, to all but one of which we need but refer.[17]

The act singled out is that of January 4, 1889 (25 Stat. L., 642), concerning the Minnesota Chippewas only, with whom, and with whose lands, the development of a few years later, already hinted at, had to do. The circumstance of the statute's entitlement, as being " for the relief " of the Indians may contain a chuckle for those who reflect upon the obviousness of the " relief " which had been going on for years, but the act was nevertheless a sane step in the direction of more orderly control. Under it the Chippewas were to be " relieved " of their pine thereafter at a full and fair price under strict governmental supervision. In substance the act provided for the cession of all Indian lands to the government save a sufficiency thereof to provide them all with allotments. The lands so ceded were to be surveyed, cruised, carefully appraised, and disposed of in a manner to bring the most advantageous prices for both land and timber, and the monies accruing from such sales were to be set up into a permanent fund for the benefit of the ceding tribe. Some slight changes in the method of sale were made a few years later by the act of February 26, 1896 (29 Stat. L., 17), and two or three later acts which it is not necessary to enumerate, as they made no change in the essential character of the original statute.

The story of these lands to this point has done two things. First it has served to illustrate the considerable strengthening of Order's grip which had come about in the period between the days when Reesian activities were both unchecked and uncheckable and those in which government began to take thought of the matter in something like serious fashion. Order still had a long way to go. But at least there had been an advance.

But though government's grip was strengthening, the forest toll was growing, keeping pace with that fierce surge of development of which the Lakes Indians story is but symptomatic. The forest was going, but America as yet did not know it. She had not yet come to see nationally that

[17] Acts: February 16, 1889 (25 Stat. L., 673); June 12, 1890 (26 Stat. L., 146); July 13, 1892 (27 Stat. L., 139); June 10, 1896 (29 Stat. L., 343); June 7, 1897 (30 Stat. L., 88); June 7, 1897 (30 Stat. L., 90); March 1, 1899 (30 Stat. L., 929); Feb. 11, 1901 (31 Stat. L., 766).

as the Anglo-Saxon goes everywhere, with his hatchet in his hand and thoughts of manufacturing in his brain, distant forests that have been described as "interminable" are fast shrinking away, and their end may be foretold without any subtile prophecy.[18]

The other purpose served by the story of these Indian lands is simply this: It furnishes the background for the first important practical development of American forestry. Indeed, it is hardly an exaggeration to say that this Indian pine land episode was made to order for American forestry.

The year 1902 witnessed the beginning of that further development in the shape of a further amendment to the "relief" measure of 1889. This new enactment, which has come to be known as the "Morris Act,"[19] by reason of the interest and labors in connection therewith of the Hon. Page Morris, of Minnesota, did not make any changes in the basic features of the original law. Those features remained what they had been: the scientific and business-like disposal of the Indian pine lands and the full protection of the rights of the Indian in connection therewith.

What the new act did in effect was to strengthen the old one by providing for the utilization of forestal knowledge in the working out of its provisions. For one thing it made all subsequent purchasers of stumpage agree to harvest, and not to devastate. That is to say, they were to remove only the merchantable pine; they were to cut no other timber except such as might be absolutely necessary in the economical conduct of the logging operations; and, finally, they were to burn or remove sufficient of the débris left from the logging to minimize the fire hazard for the remaining and growing forest which such neglected litter creates.

All this as to the lands in general. As to some two hundred thousand acres of them, it went much further. It provided that they should be logged only in accordance with plans and specifications to be prescribed by the Forester of the Department of Agriculture with the approval of the Secretary of the Interior, and that 5 per centum of the pine standing on them should be left for reforestation purposes. These special areas were to be selected by the Forester[20]

[18] *Gardeners' Magazine*, London, December 13, 1873.

[19] Act of June 27, 1902 (32 Stat. L., 400).

[20] As to "Forester," see act of March 1, 1899, which brought this change in title of the head of the forestry unit about (30 Stat. L., 949).

and the exempted trees were to be designated under his directions. The act further provided that after the logging of this special area it was automatically to become a forest reserve as though created in accordance with the act of 1891 (26 Stat. L., 1095, 1103). So was laid the foundation for the Minnesota National Forest of to-day, and so was the Forestry Bureau [21] given its first sizeable job of practical work on government land.

In addition to these two hundred thousand acres which automatically went into the forest reserve, the 1902 law also made provision for the setting aside from the same Chippewa lands as the two hundred thousand acres, of "ten sections, islands and points," which were thereafter not to be open to sale or settlement, both as regarded land and timber. These sections were to be selected by the Forester with the approval of the Secretary of the Interior.

Some misunderstanding arose between the two departments regarding jurisdiction over these selected sections, which led to a rather grim definition of the entire question of jurisdiction in the following year as regarded the entire area contemplated by the Morris Act. The Department of the Interior asserted itself with some vehemence both as regarded jurisdiction over the "ten sections" and over forest reservations in general.[22]

In connection with its work on the Minnesota Indian lands the Forestry Bureau also made studies of the forest situation on the Chippewa reservations in Wisconsin at the request of the Secretary of the Interior, drawing up plans for their scientific lumbering and for their protection from fire.[23]

The advancement to bureau status which we have already noted was due, according to the Secretary of Agriculture in his 1901

[21] Bureau rank was attained in 1901; act of March 2 (31 Stat. L., 929).

[22] Report on Wind Cave, Crater Lake, Sullys Hill, and Platte National Parks, Casa Grande Ruin, and Minnesota National Forest Reserve, pp. 17-20 (1909). See act of May 23, 1908, by which these "ten sections" lands were made part of the Minnesota Forest.

[23] A sequel to this Indian-pine lands story developed on October 24, 1923, with the filing of a suit by the Wisconsin Chippewas to recover damages for depredations on certain of their lands, title to which has been in controversy for over forty years. Decisions of the United States Supreme Court on January 7, 1918, in Wisconsin v. Lane (245 U. S. 427) and United States v. Stearns Lumber Co. (245 U. S. 436) established the Indian title. Chapter 429 of the Laws of Wisconsin, approved July 14, 1923, gave the Indians the right to sue the State and certain lumber interests as co-defendants.

report, to increased popular understanding of forestry and congressional appreciation of the work being done by the Forester and his subordinates. It came into effect formally on July 1, 1901, as a result of a clause of the agricultural appropriation bill of March 2, 1901.[24]

Naturally the change in policy instituted by Pinchot made a complete reorganization necessary for the more effective projection of his point of view. This was set in motion soon after he took office and the main features established along the lines already indicated. Changes and additions were made from time to time, but by 1902 the activities of the Bureau may be said to have shaken down into a permanent alignment providing for work in

1. Forest Management
2. Forest Investigations
3. Tree Planting
4. Records

Of these groups of activities the first, Forest Management, constituting the real background of the Pinchot policy, has already been pretty thoroughly described, except, perhaps, to mention that by 1905 considerable work of this sort had been undertaken coöperatively with the forestry departments of seven states and of Hawaii.

Forest Investigations, comprising, as the phrase indicates, work of a research nature, involving attempts at the solution of various forest problems, received considerable attention both independently and in coöperation with other bureaus. It was in this field that the Forestry Bureau in 1903 scored a considerable success when it devised the so-called "cup and gutter" system for the extraction of turpentine, an innovation which revolutionized the entire naval stores industry by doing away with "boxing," which was highly injurious to the trees, and at the same time increasing the yield of turpentine by nearly 50 per cent.[25]

[24] But note also the act of June 3, 1902 (32 Stat. L., 286, 303).

[25] Secretary of Agriculture, Annual Report, 1903, p. xlvii. In view of the findings of the Select Committee on Reforestation of the Sixty-eighth Congress, first session, during its investigation of the naval stores industry in 1923, the 1903 estimate of the "success" would seem to have been somewhat overenthusiastic. See 68 Cong., S. rep. 28, p. 6.

Studies were also made in the use of tree planting as a means of checking sand-dune encroachment—which calls to mind the old Massachusetts law of 1739 for the protection of Truro Town. Timber testing work, stressed under Dr. Fernow, was resumed in coöperation with the Bureau of Chemistry; tanning extract and paper pulp studies being made with the same bureau. Forest insect investigations were started with the Bureau of Entomology. Another bit of investigation, inaugurated in 1901 in coöperation with the Geological Survey, is of especial interest as being the first definite step made in the adoption of a policy of forest protection for the eastern watersheds, the complete consummation of which was not to come for ten years.[26] This was the examination of 9,600,000 acres in the Southern Appalachian region with a view to their ultimate acquisition as forest reserves. It included their mapping, classification, and the ascertainment of their approximate cost. Secretary of Agriculture Wilson, always an enthusiast for forestry development, strongly urged in his 1901 report the acquisition by purchase of reserves in the eastern watersheds, declaring that a precedent for such action existed in the purchase from the Blackfeet Indians, in 1896 (29 Stat. L., 321, 353), of six hundred thousand acres which were put into the Flathead Forest Reserve in the following year. The Secretary, also, in December, 1901, made an exhaustive report of the results of the collaborative investigation, which was transmitted to Congress with a special message by President Roosevelt.[27] A short preliminary report made earlier in the year strongly urged the adoption of an Appalachian Reserves policy, a recommendation concurred in by President McKinley. As a result of this earlier report a bill was introduced in the Senate providing for the inauguration of the policy, but, though favorably reported, it was not voted on.[28]

Of forest legislation between 1898 and 1905 special notice need be given here only to the acts of June 6, 1900 (31 Stat. L., 614), and March 3, 1901 (31 Stat. L., 1037), which restricted selections made under the "forest lieu" clause of the 1897 law to vacant, non-mineral, surveyed public lands subject to homestead entry. Lieu

[26] Agitation for this policy began in 1899 with the organization of the Appalachian National Park Association in North Carolina.

[27] 57 Cong. 1 sess., S. doc. 84.

[28] 56 Cong. 2 sess., S. 5518.

selectors, however, were given to October 1, 1900, as an extra period of grace within which they might select from unsurveyed as well as surveyed lands.

This forest lieu legislation formed the basis for the notorious Oregon timber land frauds, which resulted in the rather severe impairment of the reputations of a number of persons occupying tolerably exalted positions of public trust. The scheme of the thing, without going into details, consisted of the swapping with the government of more or less worthless school lands in Oregon and California located within forest reserves for valuable timber lands in the unreserved public domain outside. Title to the school lands, as well as information as to the creation of forest reserves containing them, was acquired by methods that recall the Florida days of Mr. Dabney.

This affair "broke" in 1902, about a year after Secretary Hitchcock had instituted investigations. For nearly a decade thereafter it furnished the sensational magazines with almost an embarrassment of raw material. Like most affairs of the sort it created, in the long run, some good to counterbalance the evil. It drew the attention of the nation to its timberlands; it put the "Scare of God"—to employ an Oregonicism of the day—into a number of larcenously inclined persons; finally, it had much to do with the passage of the act of March 3, 1905 (33 Stat. L., 1264), abolishing the forest lieu idea *in toto* as a principal of general application.[29]

It will be recalled that one of the results of the outcry raised by Carl Schurz and others in the seventies over timber theft and timber land acquisition through abuse of the defective land laws was the Public Lands Commission with its Donaldson report in the early eighties.[30] The Oregon disclosures caused history to repeat itself in the Public Lands Commission of 1903, which President Roosevelt appointed to examine into the general question of the safeguarding of public natural resources, the vulnerability of which to crafty attack, the Oregon land frauds had demonstrated. The Forester sat

[29] See, however, the special lieu-selection acts affecting the Northern Pacific land grant.—Act of July 1, 1898 (30 Stat. L., 620), as amended March 2, 1901 (31 Stat. L., 950), May 17, 1906 (34 Stat. L., 197), and February 27, 1927 (39 Stat. L., 946). Also act of March 2, 1879 (30 Stat. L., 993), covering Northern Pacific lands in Rainier National Park and Pacific Forest Reserve.

[30] 47 Cong. 2 sess., H. misc. doc. 45, pt. 4.

on this Commission, which, after extensive hearings in 1903 and 1904, made an exhaustive report[31] and sundry recommendations, none of which ever crystallized into legislative enactment. The Commission and its work, however, did blaze the trail for noteworthy conservational advancement a few years later, and it has been regarded in some quarters as the real genesis of the conservation movement.

But one thing that it affected immediately—or helped to affect—was the trend of forest affairs early in the year 1905. At the beginning of this year the Forestry Bureau was in encouraging condition, with six years of phenomenal growth behind it. Dr. Fernow's tiny force of eleven, including two trained foresters, had grown to a personnel 821 strong, including 153 trained foresters; for which organization there had been appropriated for the fiscal year 1905, the sum of $398,000, not including salaries; a figure comparing rather impressively with Dr. Fernow's $20,000 in 1898.

The situation was favorable also in other ways. In President Roosevelt, Forestry had a staunch ally. In developing public opinion, then just beginning to trend toward that tremendous vogue for the cult of the out-doors, it found little if any hostility. Under such general circumstances the report of such a commission, called into being by conditions such as have been described, could not fail of a favorable reception by people among whom conservation in general and forestry in particular were by way of becoming fashionable.

So that all things considered a more propitious time could scarcely have been chosen for the putting through of legislation designed to end the anomalous situation under which the country's forest work was divided among three bureaus in two departments; and to unite that work in the forestry organization in the Department of Agriculture. Which is perhaps why President Roosevelt advocated just those changes in his message to Congress on December 6, 1904; and why a bill[32] embodying those changes passed the House just six days later, and was reported in the Senate with a strengthening amendment on the thirteenth of the following January. On the second day of that same month the American Forest Congress, called by and held under the auspices of the American Forestry Association, convened in Washington, D. C.

[31] 58 Cong. 3 sess., S. doc. 189.
[32] 58 Cong. 2 sess., H. R. 8460.

A time-honored device in salesmanship, both legitimate and illegitimate, is what is known as the " hoo-rah "—that grand and final concentration upon the nearly persuaded prospect, or the almost bamboozled sucker, as the case may be, of a flood of clinching argument, or persuasive plausibility, again as the case may be, that will convince, cajole, shame, or browbeat him into signing on the dotted line.

The calling of the Forest Congress at that particular time may not have been the perpetrating of a " hoo-rah " by the American Forestry Association, designedly and with malice aforethought.

It may have been all-unconscious, a mere coincidence. But whatever it was, planned or accidental, it was a magnificent " hoo-rah," nevertheless.

There was brought together in the same city in which Congress was uncertainly fingering the contract submitted for its approval the most notable forestry gathering in the whole history of the forestry movement in America. It was a far more notable gathering than the one at Cincinnati in 1882. It assembled around the same table, in a manner of speaking, not merely the leading exponents of forestry, but the leading lumbermen, the great railroad men, the large-scale users of the products of the forests.[33] It typified in striking fashion a great change in forest sentiment that had come to pass since the days of " Woodman, spare that tree " and " Denudatic." Its presiding officer, Secretary of Agriculture James Wilson, called attention to this fact when he said " to-day lumbermen and foresters are working together in active, hearty, and effective coöperation on the same ground." It heard the views of a Weyerhaeuser and of a James J. Hill as well as those of a Pinchot. Finally it heard from the lips of a President of the United States, who was also a forestry enthusiast, that the object of forestry was not to " lock up " forests like so much " bric-a-brac " but " to consider how best to combine use with preservation."

[33] The purpose of the Congress was stated in the official call to be the establishment of "a broader understanding of the forest in its relation to the great industries depending upon it; to advance the conservative use of forest resources for both the present and future needs of these industries; to stimulate and unite all efforts to perpetuate the forest as a permanent resource of the nation."

The Forestry Congress adjourned on the sixth of January[34] after adopting a series of resolutions urging, among other things, the following:

1. Repeal of the timber and stone act
2. Amendment of the forest lieu act
3. Creation of forest reserves in the Eastern watersheds
4. The unification of all government forest work in the Bureau of Forestry of the Department of Agriculture.

Three weeks later the contract had been signed, sealed, and delivered, in the shape of the act of February 1, 1905 (33 Stat. L., 628), which took effect as of the date of its passage. Thus was consummated in most masterly fashion a most notable piece of legislation. Not for nothing had the American Forestry Association learned politics from Dr. Fernow. Not for nothing was it so fortunate as to have in the Presidency of the United States at that crucial time a man who was at once one of the most enthusiastic forestry advocates and most finished politicians who had ever filled that exalted office.

In broad effect this law may be said to be a consolidation of forestry's gains in 1876, 1891, and 1897. Under its provisions, one forestry unit in one department was now to perform—with some minor exceptions to be noted later—all the forest work of the national government everywhere. Until the passage of this act, again let it be remembered, the original forestry organization in the Department of Agriculture had looked after the scientific and investigational side of the subject only. It had had nothing to do—save indirectly and by courtesy—with the forest reservations created under the authority of Section 24 of the act of 1891. Just prior to the passage of the 1905 law there were in reality four separate forestry organizations in existence. First, there was the Forestry Bureau in the Department of Agriculture, which had its beginning in 1876. Then there was the corps of special agents in the General Land Office of the Interior Department, which had been set up by

[34] Its proceedings were later got together in book form and published by the Association in a handsome volume of 474 pages, entitled "Proceedings of the American Forestry Congress. Held at Washington, D. C., January 2 to 6, 1905, under the auspices of the American Forestry Association." H. M. Suter Pub. Co., Washington, D. C., 1905.

Schurz and Williamson in 1877. This force of men was concerned with the protection of timber lands on the unreserved public domain. Again in the same department, and under the Geological Survey, there was the Division of Geography and Forestry, charged under the 1897 law with the survey and mapping of the forest reserves. And, finally, in the same department, there was that Forestry Division of the General Land Office, set up in 1901, whose activities and organization we have described at some length. The work of all these organizations, save that of the special timber agents, was now to be concentrated in the one bureau in the Department of Agriculture.

The Division of Geography and Forestry of the Geological Survey resulted from the reorganization, in 1897, of the Division of Geography of that Bureau to take care of the work of mapping and surveying the new reserves required by the act of that year. The original Division of Geography had been organized in 1896 under Henry Gannett. From its very beginning, in 1879, however, the Geological Survey had gathered considerable forest data, and had been enabled, in 1891, when the President was empowered to set aside forests, to furnish much valuable assistance with regard to locating their boundaries. Later on, the regulations promulgated by the General Land Office for the administration of the reserves between 1897 and 1905 were based to a considerable extent upon the information secured through the work of the Division of Geography and Forestry. All told, the forest work of this Division covered some seventy million acres and collected much valuable information regarding general forest data apart from the reserves proper.[35]

The new law directed the immediate transfer of the reserves to the jurisdiction of the Department of Agriculture—a total area at that time of something over sixty-three million acres. It also provided that the revenues derived from the reserves during a period of

[35] The reader will recall Gannett's contribution in the Geological Survey Report for 1898, which was so generously praised by Pinchot. Work of a similar nature performed by Gannett and his Division between 1897 and 1905 include the following: all official Geological Survey publications; Summary of Forest Work in 1899-1900; The Forests of Oregon; and The Forests of Washington. For a general description of this Division, historical, administrative, etc., see Bulletin 227, U. S. Geol. Surv., 1904, Series G., Misc. 27. Consult also Service Monograph No. 1 of the Institute for Government Research.

five years from the passage of the act should be expended for their protection, administration, improvement, and extension as the Secretary of Agriculture might direct. The generosity of this provision was not realized at the time, but it became apparent directly.

The administrative system already existing in the Division of Forestry of the General Land Office, comprising some five hundred employees, was merged into the older organization without disturbance and without radical change. The entire personnel of the Interior Department organization had been placed under the classified civil service by executive order on December 17, 1904.[36] With the merging of the two organizations this status came to apply to the entire personnel of the new bureau with the exception of persons employed merely as laborers and of persons whose appointments had to be confirmed by the Senate.

On the day the transfer law went into effect the Secretary of Agriculture issued the following instructions to the Forester regarding the general principles to be followed in the administration of the forests under the new regime:

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people and not for the temporary benefit of individuals or companies. All the resources of forest reserves are for use, and this use must be brought about in a thoroughly prompt and business-like manner, under such restrictions only as will insure the permanence of these resources. The vital importance of forest reserves to the great industries of the Western States will be largely increased in the near future by the continued steady advance in settlement and development. The permanence of the resources of the reserves is therefore indispensable to continued prosperity, and the policy of this Department for their protection and use will invariably be guided by this fact, always bearing in mind that the *conservative use* of these resources in no way conflicts with their permanent value. You will see to in that the water, wood, and forage of the reserves are conserved and wisely used for the benefit of the home builder first of all; upon whom depends the best permanent use of lands and resources

[36] There was probably crying need for this action. In an address delivered before the Society of American Foresters on March 26, 1903, by a man who knew what he was talking about, it was pointed out that the field force of the Land Office Forestry Division had been recruited from lawyers, doctors, editors, real estate men, postmasters, professional cornet players, bartenders, dive proprietors, superannuated ward politicians, and immature boys. See Proceedings of Society of American Foresters, I, pp. 41-52.

alike. The continued prosperity of the agricultural, lumbering, mining, and live-stock interests is directly dependent upon a permanent and accessible supply of water, wood, and forage, as well as upon the present and future use of these resources under business-like regulations, enforced with promptness, effectiveness, and common sense. In the management of each reserve local questions will be decided upon local grounds; the dominant industry will be considered first, but with as little restriction to minor industries as may be possible; sudden changes in industrial conditions will be avoided by gradual adjustment after due notice; and where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.

These general principles will govern in the protection and use of the water supply, in the disposal of timber and wood, in the use of the range, and in all other matters connected with the management of the reserves. They can be successfully applied only when the administration of each reserve is left very largely in the hands of the local officers, under the eye of thoroughly trained and competent inspectors.

A careful perusal of the above is commended, not so much because of its terse common sense as because of its continuous existence to the present moment as the standing general orders under which the forest work of the country has gone and still goes forward.

The balance of the fiscal year 1905 was necessarily largely devoted to the coördinating of the merged organizations. Because of the policy begun in 1898, whereby practical forest work had been emphasized, because also of the familiarity with the reserves and their problems which the older organization had acquired from its technical advisory capacity, this operation presented no serious problems, and by June 30 the merger was working with a fair degree of smoothness. Its responsibilities were enlarged during the same period through executive orders which increased the area of the reserves by over a score of millions of acres. The total reserve area on June 30, 1905, was 85,693,423 acres.[37]

[37] Although since 1897 the acreage of the reserved areas had, in general, steadily increased as tract after tract was set aside, one exception to this trend must be noted in the so-called Olympic withdrawals. By his two proclamations of April 7, 1900, and July 15, 1901 (31 Stat. L., 1962 and 32 Stat. L., 1981), President McKinley restored nearly a million acres to the public domain, under the authority granted in the 1897 law, as the result

The following fiscal year was begun under a new name. By virtue of the agricultural appropriation act of March 3, 1905, for the fiscal year 1906 (33 Stat. L., 872), the Bureau of Forestry became the Forest Service beginning July 1, 1905.

The first year under this simpler and more dignified title was likewise the first year of full control by the new organization, and was a noteworthy year in every respect. The area of the reserves was increased by virtue of executive withdrawals from the public lands to a total of 106,999,138 acres. The Service collected revenues totalling $767,219.96 as compared with slightly more than $60,000 in the year preceding. Timber sales jumped from ninety-six million to three hundred million feet. There was a great increase, also, in the number of free use permits. Altogether, things looked exceedingly propitious for the speedy fulfillment of Secretary Wilson's prophecy of the preceding year—"The forest reserves are certain to become not only self-supporting but a scource of large public revenue." [88]

The very marked increase in revenue for this year was due in part to a great increase in timber sales. But another element—and a new one—was principally responsible for the change. In this year a charge was made for the first time for the privilege of grazing stock on the reserves, and fees amounting to over half a million dollars were collected. While the fees were moderate, not beginning to represent the intrinsic value of the privilege, the change in policy was a rather violent one. What had, from time immemorial, in the West, been a right, was now a privilege with a price attached. Comparatively little friction resulted, however, the charges were paid willingly and promptly, and no falling-off in the number of stock grazed in the reserves resulted. It is proper to remark in this connection that the passing of the days of Arcadian freedom which the imposition of this charge might seem to mark was more apparent than real; for the reason that in the "good old days" the "free" range was not infrequently arrogated and held by virtue of the Winchester. "Disputes" between stockmen in

---

of representations that the land was agricultural. Gannett had nothing but praise for the first of these eliminations (See p. 13 of Annual Report of Geological Survey, 1900), but the action as a whole was much criticized later (See H. S. Graves, in *Outlook* for December 28, 1912).

[88] Secretary of Agriculture, Annual Report, 1905, p. lxi.

many instances had been civil wars in everything but name. Under such a state of affairs the small stock owner was greatly handicapped. Under the administration of the forest reserves by the Forest Service the grazing of stock was destined to become much more nearly a right, free to all men, than it had ever been before; dependent upon the square deal rather than upon weight of metal and quickness on the draw.

Although this somewhat revolutionary regulation was put into operation with no friction of a violent nature, it is not to be understood that it was unopposed everywhere, then and later. There was much outcry. A considerable amount of bitter opposition had existed for some years even to the principle of the regulation of grazing[*] without fees, there being some stockmen who either could not or would not see that unregulated grazing was ruinous to a forest, and thus to their own disadvantage in the long run. The imposition of the fees naturally did not add to the peace of mind of men with this point of view. It is, therefore, no matter for wonderment that indignation meetings were held throughout the western country, culminating in June, 1907, in the so-called Public Lands Convention, at Denver, at which a vast amount of bitter talk condemnatory of the Forest Service was let loose."

The feeling that was smoldering throughout the cattle country, or better, perhaps, one extreme phase of it, was given expression by a stockmen's journal a short time before the Public Lands Convention in an editorial with a decidedly Hartford Convention flavor. It lugged in "taxation without representation" and indulged in rather slightly veiled threats of a coming Western secession, of a saying by the West to the East: "Go your way and we will go

[*] The grazing regulations under the Department of the Interior regime had been mostly prepared by the Forestry Bureau of the Department of Agriculture.

[†] For an excellent sample of this the address of D. C. Beaman, of Denver, should be read. This address, "The Abuses of the Forest Reserve System as at present Administered", was privately printed in pamphlet form at the Press of the Western Newspaper Union of Denver. An address along similar lines, "The National Forests and the Forest Service," was delivered by Mr. Beaman at Albuquerque on September 20, of the following year before the Sixteenth National Irrigation Congress, and was pamphletized by the *Albuquerque Morning Journal*.

ours." [41] The writer of the editorial overlooked only one thing—he made no mention of the "eating out of substance."

As stated above, the imposition of these fees and the more efficient grazing control which they make possible have made for the advantage of all concerned. It is only fair to point out, however, that there was a bit of the "strong arm" in the way the policy was first adopted. The act of 1897 does not in so many words grant authority to charge grazing fees. On the other hand, it does not forbid such a charge. The Forester and the Secretary of Agriculture, after efforts had been made without success to get a specific grant of authority from Congress, decided, in view of the importance of the matter, to take a chance on that being allowed which is not forbidden. They did so. They got away with it. Events have justified their temerity, unquestionably, so far as results are concerned. As to establishing a precedent with dangerous possibilities in it, there may be legitimate ground for honest difference of opinion.[42]

From the standpoint of "gate receipts" the new administration continued to function brilliantly. Forest revenues in 1907 were more than twice as large as in the previous year, totalling $1,571,059.44. In 1908 the figure was $1,842,281.87. This prosperous intake speedily attracted legislative attention and voices began to be raised against the continuation of the forest reserve special fund feature of the transfer law of 1905. The brakes began to be applied the following year. The law of June 30, 1906 (34 Stat. L., 669, 684, forbade unrestricted spending from the fund after June 30, 1908; requiring, after that date, the submission of specific estimates of expenditures to be made therefrom along with the regular estimates of appropriations.

This 1906 law contained another noteworthy provision designed to allay the dissatisfaction of the West with regard to the lack of tax revenue, immediate or prospective, from the areas permanently

[41] *Ranch and Range* (Denver, Col.), March, 1907, p. 16. The same paper referred to the administration of the forests as "landlordism" in its issue for the following month, p. 3.

[42] The writer makes this statement in the full knowledge of the decision in United States v. Grimaud *et al*, 220 U. S. 506, holding that the Secretary of Agriculture has the right to charge grazing fees on the National Forests. He is also familiar with Mr. Pinchot's views as set forth as p. 58 of the "Fight for Conservation."

set aside in the forest reserves. Ten per cent of the forest revenues collected that year were directed to be paid over, pro rata, to the various states and territories in which the income-producing areas were located for the benefit of public schools and public roads therein. This was the first attempt to settle a vexing question that had appeared with the creation of the reserves and grown with their continuance.

This provision was included also in the appropriation act passed on March 4 of the following year (34 Stat. L., 1270). The act of May 23, 1908 (35 Stat. L., 260), increased the local share to 25 per cent and made the legislation permanent.[43]

For a number of other reasons the act of March 4, 1907, was a maker of forest history. First of all it definitely abolished the forest reserve special fund upon which the 1906 law had merely put limitations, by providing that all forest income accruing after July 1, 1907, was to be covered into the Treasury as miscellaneous receipts.[44] Again, by providing that forest reserves were thenceforth to be known as "national forests" it created an appropriate companion term for "Forester" and "Forest Service"; and at the same time got rid of an expression that had somehow lent itself to the accusations of the anti-forestry element to the effect that "reserves" were placed where valuable resources were "locked-up" and placed beyond the reach of "the people." The salary of the Forester it gave a further boost—this time to $5,000.[45]

Finally, by decreeing that no more new forests should be created, or old ones enlarged, in the states of Oregon, Washington, Idaho, Montana, Colorado, and Wyoming, except by act of Congress, it virtually repealed the act of 1891, under which the then existing forests had been created.[46] Had this blow fallen full force it

[43] The 1906 and 1907 clauses contained a stipulation that the amount paid to any county was not to exceed forty per cent of the county's revenue from all other sources. The permanent enacting clause in 1908 omitted this proviso.

[44] But a compensating increase in appropriations is to be noted, the one for protection, administration, improvement, and extension of the reserves being raised from $900,000 to $1,000,000.

[45] *Cf.* acts of July 14, 1890; March 1, 1899; March 2, 1901; June 3, 1902; and March 3, 1905.

[46] This prohibition was extended to California by the act of August 24, 1912 (37 Stat. L., 497); and to Arizona and New Mexico by the act of June 15, 1926 (44 Stat. L., 745).

would have unquestionably given the forest conservation movement a jolt. Fortunately, however, its force was largely deadened when President Roosevelt interposed a bit of benevolent despotism, by creating, on March second, two days before the act became effective, a total of twenty-one new reserves in the area affected, with the acreage of over forty million acres.

It would be too much to say that this legislation was the result of a popular reaction against the forestry movement. But that it was not altogether friendly is obvious. It is to be accounted for in part on the ground of reaction. Forestry had been swimmingly successful now for several years, and, its praises having been sung perhaps a bit too fulsomely, human nature began to weary of Aristides. Then there was the Western hostility we have already referred to, a hostility that had not been allayed by the fact that in those years of the reserve system politics picked the field men.[47] Finally there were the bitternesses engendered by the Oregon timber frauds prosecutions.[48] And let it not be thought that all these bitternesses were the hatreds of balked rascals. Timber stealing had been an American pastime since 1623. It was a bit of a wrench for us to adjust ourselves to the changes wrought by "experience and necessity."

There were initiated in 1908 a series of important conferences upon the general subject of conservation which were developments, more or less direct, of the activities of the Public Lands Commission of 1903. The first was the Conference of Governors, sum-

[47] A careful writer—and a forester, at that—stated in 1903: "If the present dissatisfaction in the West is aggravated by unwise administration and ill-considered creation of new reserves there may be a rebellion ending even in the abolishing of the reserves entirely." In connection with this statement a consideration of a memorial adopted by the legislature of the State of Washington late in 1906 or early in 1907, and laid before Congress on February 21, 1907—less than a month before the enactment of the unfriendly statute of March fourth—will not be devoid of interest. Its formidable list of whereases—eight and thirty of them all told—rivals of the list of He hases in the immortal Declaration. More, it is strongly suggestive of the same, complaining, as it does, of grazing "taxes," usurpation of the law-making power by the Secretary of Agriculture, "arbitrary edicts or ukases," the "petty exactions and pesterings by . . . officers and underlings." It winds up by declaring that "the people of a local community can best be trusted to decide what is for their best interests and those of their children and their children's children." See Cong. Record, pp. 3561, 3562, 59 Cong. 2 sess.

[48] See Annual Reports of the Secretary of the Interior, 1903 to 1906, inclusive, and Puter, Looting of the public domain.

moned by President Roosevelt, in March. After its adjournment the President appointed a National Conservation Commission, which compiled and submitted, in 1909, an exhaustive inventory of our national resources." Shortly after the submission of this report the Commission met commissions from Canada, Newfoundland, and Mexico sent at the request of President Roosevelt in the first North American Conservation Conference, at Washington. A suggestion to go a step further and hold a world conference at the Hague did not materialize.

The year 1908 also witnessed extensions of the activities of the Forest Service beyond the confines of the Department of Agriculture. One involved the supervision, by request of the Secretary of War, of the sale of timber on a military reservation; and a technical survey of the standing timber on all the military reservations. Another had to do with the management of the forests on the several Indian reservations by the Forest Service in accordance with an agreement entered into by the Secretaries of the Interior and Agriculture. This arrangement, which went into effect January 22, 1908, was fated to be short-lived; differences developed, the Interior authorities decided that the plan was contrary to law, and ordered its discontinuance beginning July 20, 1909.[30]

This latter incident is a good thing for the cautious historian to avoid, for it is heavily charged with high explosive. It was one of the things that brought about the Ballinger-Pinchot affair, of recent memory, and thereby played a not inconspicuous part in the historic "splitting" of a great political party in 1912. But the matter must be touched upon for the reason that it marks a "split" of another sort—the definite establishment of what is in effect another forestry bureau in another department; in a word, the Forestry Branch of the Office of Indian Affairs.[31]

[30] 60 Cong., S. doc. 676.

[31] It has been hinted on the Interior Department side that the Forest Service attempted a bit of peaceful penetration with regard to control of the Indian forests. The attempt being resented, the plan collapsed.

The reader will recall that there had been a threat of trouble between the two departments over Forestry-Indian affairs in 1903, in connection with the carrying-out of the Morris Act. Differences of opinion stirred up then have persisted. Speaking of the regulated logging of the Chippewa pine lands Mr. Pinchot said, in 1905, "The success of the plan is entirely assured." But the foresters of the Indian Office, speaking of the same operation, in 1922, said, "The results attained were not entirely satisfactory."

Mention has already been made of the fact that all of the forestry work of the government is not done by the Forest Service. Although it will necessitate a temporary jumping ahead of our story it will be well to digress here and notice briefly this extra-service forestry, without which a complete picture of the entire American forest situation cannot be had. Part of this independent work is done by the Indian Office; part by the National Park Service: all of it, therefore, is under the Department of the Interior.

Steps were first taken toward the creation of the Indian forest organization early in 1910, the Indian appropriation act for that year, approved March 3, 1909 (35 Stat. L., 783), having set aside one hundred thousand dollars

> To enable the Commissioner of Indian Affairs, under the direction of the Secretary of the Interior, to make investigations on Indian reservations and take measures for the purpose of preserving living and growing timber, and removing dead timber, standing or fallen; to advise the Indians as to the proper care of forests, and to conduct such timber operations and sales of timber as may be deemed advisable and provided for by law.

By virtue of a similar item in every Indian appropriation act subsequent to 1910[52] the Indian Office has been enabled to build up a forest service, directed by technically trained foresters, that administers, according to approved forestry principles, forests on thirty-five reservations, in fifteen states, with an area in excess of six million acres, a lumber content of thirty-five billion feet, valued roughly at eighty million dollars, and an annual revenue

---

But on the other hand the Association of State Foresters, after a visit to the Minnesota National Forest in August of that same year, drew up a resolution highly commending the work done under the Morris Act, declaring that reproduction was abundant and a second growth assured. See also "Indian Timberlands," by J. P. Kinney, in the *Journal of Forestry* for October, 1921. Also "Forestry on Indian Reservations" by same author in *Forestry Quarterly*, x, 471. As to a consolidation of these two forestal activities the gist of the Indian Service viewpoint seems to be that the unique status of Indian lands and the national obligation to administer them with an eye single to the interest of the Indians calls for a system of protection and management apart and different from the national forest system. With this view the Forest Service agrees (See Report of Forester, 1923, p. 13), maintaining, however, that with the liquidation of the Indian equities and the resulting change in status of the reservations, the unallotted Indian timber lands should be incorporated in the national forests.

[52] See also acts of March 28, 1908 (35 Stat. L., 51), and March 3, 1911 (36 Stat. L., 1076).

from timber sales of a million and a half dollars. This organization consists (1927) of a chief supervisor and ten assistants with general duties of inspection and administration, about fifteen trained foresters [53] in charge of the various reservations, and some one hundred and fifty rangers, guards, scalers, and special employees. The Indian forests are, naturally, administered primarily for the benefit of the Indians.

The several national parks and monuments, with a total area in excess of eighty-two million acres, contain forests probably equal in area to those on the Indian reservations. These forests are protected and administered by the ranger force of the National Park Service which, in 1917, was established as a bureau of the Department of the Interior in accordance with the provisions of the National Park Service Act of August 25, 1916 (39 Stat. L., 535). An important difference is to be noted, however, in the way the national and Indian forests on the one hand and the park forests on the other are looked after. The object in the first case, is conservation; that is to say, use, guided by such scientific and economical methods as will insure constant reproduction of the harvested forest. In the other case the object is preservation, a keeping of the forest, as nearly as may be, in its original, primeval state. A very little timber, negligible in amount, is cut in the parks for the construction and repair of the park buildings. Apart from that no timber may be cut except it be burned, "dead or down," or, because of insect infestation, a menace to the forest as a whole. In the past some of the forest work of the National Park Service has been performed by the Forest Service by virtue of agreement, notably in the case of Lassen Volcanic National Park, in California, which is surrounded by Lassen National Forest. For a number of years the forest rangers have protected the park and attended to the small amount of trail work the park's appropriation provided for. But by far the greater part of the park forest work has always been done by the Park Service.

With these two exceptions all forest activities of the government involving actual forest administration and large scale protection are controlled by the Forest Service.

[53] The supervisor, assistants, and foresters are all graduates of forest schools.

In two other bureaus of the Department of Agriculture, however, some forest work of an investigative nature is done. These are the Bureaus of Plant Industry and Entomology, which, through the Office of Forest Pathology and the Division of Forest Insects, respectively, do the staff work of scientific campaigns against arborous blights and tree-killing insects.[54]

The outstanding legislative developments of the period under discussion have been referred to in what has gone before. They give a picture, good enough for all practical purposes, of the gradual administrative growth of the Forest Service. Certain other enactments of the period are of secondary importance; more or less of a collateral nature. Brief mention thereof, however, will not be amiss.

Most important of these acts was the so-called forest homestead act of June 11, 1906 (34 Stat. L., 233),[55] the real gist of which was the idea back of the old naval live-oak procedure in 1858; *i. e.*, the utilization for agriculture, as far as possible, of lands in forest boundaries more valuable for crop raising than for timber growing, and the private ownership of which will not interfere with the proper development of the forest as a whole. Up to the present writing a total of something like two and a quarter million acres, embraced in some twenty thousand tracts, have been opened up to agricultural entry within the national forests.

The act for the preservation of American antiquities, passed on June 8, 1906 (34 Stat. L., 225), makes provision for governmental protection of features of historical and scientific interest located upon lands controlled by the nation by authorizing the President to create by proclamation so-called national monuments including the object whose preservation is sought. Areas of this nature created within the boundaries of national forests are administered by the Forest Service. To date, fifteen such monuments have been created on national forests with a total area of something over three hundred thousand acres.[56]

[54] The lumber division of the Department of Commerce, one of the "commodity" divisions created under the reorganization of the Bureau of Foreign and Domestic Commerce in 1922, is concerned with the forest products trade solely. The Biological Survey has also from time to time collected valuable data on tree distribution.

[55] *Q. v.* See also booklet published by the Forest Service in 1917 containing the act and regulations thereunder promulgated by the Department of Agriculture, entitled "Homesteads in the National Forests."

[56] See Director of National Park Service, Annual Report, 1926, p. 66.

Somewhat akin to these areas are those which have been set aside from time to time on certain of the forests for the special protection of game birds and animals.

Mention should be made here, too, of action taken by Congress late in 1906 and early in 1907 that, though lacking the status of formal legislative enactment, is no less deserving of notice, by reason of the noteworthy study of the general forest and lumber situation throughout the country which it set on foot. This action consisted of a House resolution of December 13, 1906,[57] and a Senate resolution of the 18th of January following,[58] both requesting, in substance, the Secretary of Commerce and Labor to investigate the lumber trade with especial regard to the cost of lumber to the consumer; and to the existence or non-existence of contract agreements to fix prices. As to the justification of such an investigation at that time the writer is uncertain. That the investigation was started in a frame of mind somewhat bitterly antagonistic to the lumber business, there can be little doubt.[59]

But there is nothing mysterious about this spirit of antagonism or the reasons for its development if one takes into consideration the time of this manifestation of the same. The time was the year 1907. The inexorable law of "experience and necessity" had been running since the year 1607. The Great Inexhaustible Legend had, as we have seen, come by slow degrees to be questioned, doubted, challenged. Amazedly the heirs of that legend, the heirs of Dismal Borderism, of Broad Arrow flouting, of Manisteeism, began to note, here and there, the bottom of the bin. In a mild surprise they noted the vanishment of the "numberless" buffalo from the "illimitable" western plains. Half angrily they noted the very definite limitation of those illimitable areas in the passing for all time of the day of fertile farms in those areas to be had for the homesteading. They began to note a contraction in their lives and the ordering thereof which they could not comprehend and which they did not like, a passing of the old American "spaciousness." They began to see that the idea of an America "big enough for all creation" had a joker hidden in it. They began to wonder about

[57] 59 Cong. 2 sess., H. R. 652.
[58] Cong. 2 sess., S. H. 189.
[59] Cong. Record, December 13, 1906, pp. 352 *et seq.*; *ibid.*, January 18, 1907, pp. 1330 *et seq.*

that other idea of America that had been so industriously poured out from hustings and platform and pulpit since long before the days of Kossuth; to-wit, that America had room enough and to spare for the alleged "down-trodden and oppressed." And so beginning to note and to wonder, the next logical and inevitable thing for them to do was to begin to get "mad." Which, very thoroughly, they proceeded to do. That they should turn against the very idea they had defied, the idea of bigness, was not contradictory. It was the most natural thing in the world. It was human nature, the same human nature that three centuries before had, just as naturally and inevitably as now, experienced a metamorphosis of economic thought proportioned in violence to the binding pressure it had theretofore endured. Only then the change had been from restraint to freedom. Now stern "experience and necessity" decreed it was to be the other way around. The accompanying adjustments were bound to be painful.

And this time, the first decade of the century, was just about the time the old legend was definitely passing. The little flurry about "Captains of Industry" in 1902, when a detail of that species was rounded up to dine with the Kaiser's brother, was perhaps its last gasp. A few years and the legend's heirs were anathematizing such gentry and uttering bitter words about "undesirable citizens" and "malefactors of great wealth." The heirs of the idea of resistance to the Broad Arrow were clamoring for its uncompromising imposition. In the White House sat Theodore Roosevelt, author of the "Winning of the West," a glorifier of the spirit of the pioneer—and, a little later, "big stick" belaborer of "Big Business." Contradictory? Inconsistent? Only as all history is that way. Not excepting all American history, with its naive change of viewpoint about naval timber between 1750 and 1800, its solemn top-sergeantry in Florida and Michigan, its calm ignoring of economic facts in its revivalistic chanting of "Woodman, Spare That Tree." This latest inconsistency was, after all, by the very fact of its inconsistency, magnificently consistent—an inconsistent part of an inconsistent whole.

And after all it meant just this—Finisterre had been attained. Adventure could go no farther on its undisciplined own. Order had come up and could no longer be distanced. The good old game of "profiting by the occasion" as played in political circles was

due to adopt a new set of rules. The old occasion was played out. A new one had arisen. "Bold, adventurous sons" and "persons who fear no danger" were no longer good medicine. The new occasion required a new policy.

All of which also makes more comprehensible certain other events coming to pass almost concurrently with those last noted. These events began with the adoption of a memorial to the Congress of the United States by the legislature of Oregon on February 8, 1907; the said document being formally laid before Congress by Senator Fulton, of that state, two weeks later.[60] In brief, this memorial urged upon Congress the taking of action to relieve a condition alleged to have been created in that state by the action of the Southern Pacific Railroad with regard to the so-called Oregon and California land grant; a condition which, it was declared, was seriously retarding the state's development. Specifically, that condition was the result of the refusal of the railroad company to sell, or in any manner dispose of, any of the something over two million acres of land comprised in the remainder of the said grant, which had been created originally as a part of that princely subsidization of railroad construction between 1850 and 1871 to which allusion has been made heretofore.

The act of July 25, 1866 (14 Stat. L., 239), had granted twenty sections per mile to aid in the construction of a railroad from Portland, Oregon, to the California line. Later amendments to this granting act restricted the sale of these lands by the railroad company to *bona fide* settlers only, in tracts not exceeding 160 acres per person, at a price not exceeding $2.50 per acre.[61] At the time of the grant it is probably safe to say that the distinction between agricultural and non-agricultural lands, clearly recognized in later years, received little if any attention. The entire grant, a large part of which consisted of rough mountainous land, magnificently timbered but impossible in any agricultural sense, was looked upon in the same light as the great prairie land grants in the middle sections of the country, nearly every quarter section of which was a potential farm.

[60] Cong. Record, February 21, 1907; p. 3561, 59 Cong. 2 sess.

[61] Act of April 10, 1869 (16 Stat. L., 47); act of May 4, 1870 (16 Stat. L., 94).

In the fullness of time Oregon evolved out of the status of a frontier community, the timber on the granted lands progressively became immensely valuable as its accessibility increased, the Oregon and California passed under the control of the Southern Pacific—and the Great Inexhaustible Legend came to be shot full of holes. Meanwhile the railroad, after selling some of the grant for farms as per the terms of the restricting amendments, made the discovery that immense areas of the same could never by any possibility be made into farms and therefore were unsalable—as farming lands. As timber lands, however, they were exceedingly salable, many a quarter section being so covered with fir timber of the highest grade that a "*bona fide* settler" paying four hundred dollars for the tract would be able to realize overnight a profit on a romantic scale. Whereupon the railroad argued, very logically, that there was no such animal as that sort of a *bona fide* settler; and it determined that the lush crop of unearned increment which had sprouted up so luxuriantly all over the heavily timbered grant—to a not inconsiderable degree, it must be conceded, because of the railroad's existence—was going to be harvested exclusively by itself. This was to argue, of course, in the thought of the sixties, in the language of the "persons who fear no danger." Since then there had been a considerable accumulation of "experience and necessity." But the railroad so argued; and in the arrogance of its confidence in the continued existence of the days that had been but were no more, it rode for a fall. It proceeded to do certain things that it was clearly not entitled to do under the terms of the grant. Those things it might have got away with in the sixties, possibly even in the eighties. In the early nineteen hundreds they had become well known as the wallow mark of the great red dragon and the spoor of the octopus. And for those creatures there was now no closed season among gentlemen eager to profit by the occasion under the new rules.

What the railroad did was, first, to sell some hundreds of thousands of acres in larger blocks than one hundred and sixty acres—in one case forty-five thousand acres went to one purchaser—and at a considerably higher price per acre than $2.50—the forty-five thousand-acre sale was at seven dollars per acre—and then, beginning about the year 1903, to refuse to sell any of the remainder of the grant, amounting to something over two million acres, under

any circumstances whatsoever. Mr. E. H. Harriman, the then dictator of Southern Pacific policy, the same who was once bracketed in a certain pronunciamento with William D. Haywood in the " undesirable citizen " class, frankly declared in reply to Oregon expostulation, at the National Irrigation Congress at Sacramento, in 1907, that the lands would not be put on the market according to the terms of the grant but would be held indefinitely by the company as a private forest reserve for the supplying of ties, timbers, and other forest products necessary to a railroad's maintenance.[62]

Here, of course, was an ideal occasion presented for octopus baiting: the octopus " locking-up " immense resources from a host of " *bona fide* settlers " eager to pay $2.50 per acre [63] for land with timber on it worth one hundred dollars per acre; and at the same time in notorious *flagrante delicto* in regard to those big tracts sold to lumbermen in flat defiance of the terms of the grant. Hence the memorial. Hence, too, an exhaustive investigation in 1907 in Oregon by the Department of Justice. A Senate resolution passed on February third of the following year requested of the President information as to action taken or contemplated in the premises.[64] Three months thereafter the joint resolution of April 30,[65] authorized the Attorney-General to institute proceedings looking to the forfeiture of the granted lands to the government for breach of the conditions of the grant. Thus was the field cleared and the forces aligned for the fighting out of a legal battle of extraordinary importance, one of the most remarkable, in fact, in our recent history; remarkable not so much for the value of the property involved—although that was very great—as for its most striking exemplification of the change that had come to pass in the time since the waning of Adventure's heyday.

The story of that battle and of its final issue must wait. It was no mere overnight affair.

[62] House Hearings before Public Lands Committee on H. J. Res. 58, H. R. 9814, 10058, and 12116, 64 Cong., 1 sess., Part 5, pp. 143, 144.

[63] See 238 U. S. 409.

[64] 60 Cong., S. doc. 274, the presidential message transmitting the information requested, contains a complete history of the grant and its handling prior to the date of the Oregon memorial.

[65] 35 Stat. L., 571.

Two clauses of the agricultural appropriation act of May 23, 1908, are likewise worthy of special note, as administrative and fiscal policies of importance were inaugurated under them. One of these authorized the use of Forest Service funds, irrespective of the specific objects for which appropriated, for fighting forest fires in emergencies. The other began the system of permanent forest improvement which, with slight change, is still in operation.

By virtue of the act of March 4, 1909 (35 Stat. L., 1088, 1159), the criminal laws of the United States were codified, revised, and amended, the new compilation to take effect after January 1, 1910. Sections 9 to 56 inclusive of this new code cover the various phases of forest trespass, depredation, etc.

On the administrative side an innovation of the first importance went into effect on December 1, 1908. From the reorganization of forestry work after the 1905 consolidation act up to that time an attempt had been made to run the forests from Washington direct. But it did not work well. All roads may lead to Rome, but there are times when Rome is so far off or so unsympathetic to the local viewpoint as to make smooth and efficient administration difficult if not impossible. Desirable as the centralization of authority may be up to a certain point, its over-emphasis is not likely to make either for a supremely business-like putting through of local affairs, or for healthy local initiative.

That defect gradually coming to be recognized, steps were taken toward its elimination first, by the bringing to Washington, in rotation, of the supervisors of the forests to take charge of the Washington end of the business for terms of two or three months; later by the establishment on the aforementioned date of six practically independent district offices, in charge of district foresters, at Missoula, Denver, Albuquerque, Ogden, San Francisco, and Portland. Each one of these district offices was to be a Washington in miniature, being empowered to decide practically all district questions on the spot. The district foresters were practically given full authority and told to get results or get out. Only matters of the very largest administrative moment were required to be referred to the Washington office.[60]

[60] The district idea was not new. The idea of district independence was. The district division had been in existence for some time, but the reason for it had been convenience of inspection. Executive work was directed from Washington through an Office of Organization. See Department of Agriculture, Annual Report, 1908, pp. 418, 440, 441.

The good results of the new system were almost immediately apparent in a greater despatch of business and a closer touch between office and field. Secretary Wilson characterized the change as the "most important step forward ever taken by the Forest Service," and he was not far wrong."[67]

The new idea was emphasized further on July first of the following year by the establishment at Ogden of a central depot for the distribution of materials and supplies as needed to the forest districts of the West.

In the same year various simplifications of accounting records were made with a view to the elimination of duplication; Washington making only general records of receipts and disbursements in the districts, which in turn left to the supervisors of their component forests the details of transactions thereon.

An attempt was made by Pinchot about the same time to assemble forest officers for schools of instruction in fire-fighting; but, the Comptroller of the Treasury deciding that it was an illegal use of appropriations, it had to be given over.

Almost coincidentally with the administrative advance marked by the creation of the forest districts there occurred a notable advance in forest investigational work. There was established in the same year in which district administration began, the first experiment station[68] designed to study the problems of the forest on the ground and at first hand: to accumulate the scientific data upon which a forest procedure suited to the American environment could be based. The old dream of the superimposition, rigidly and without modification, of European silvicultural theories upon America, was not yet dead, but it was dying, and the setting up of the experiment station on the Coconino Plateau in Arizona, in 1908, may be said to mark the beginning of the realization of the

[67] The organization of 1908 is, in its main features, the one in existence to-day. For diagrams of the various changes made since 1905, see Department of Agriculture, Annual Report, 1905, p. 200; 1907, p. 344; 1908, p. 441; 1911, p. 346.

[68] Heretofore the establishment presided over by Judge Brackenridge at Santa Rosa has been referred to as America's first forest experiment station. Mr. Adams' visions concerning the work he had hoped to establish there had, as we have seen, very definitely included genuine forestal experimentation. But Santa Rosa's existence was so fleeting and so troubled that such distinction of firstness as it may deserve to be accorded should probably be regarded as a distinction by courtesy.

inevitability of the approaching demise. The Coconino station was shortly succeeded by stations in Colorado, Idaho, Washington, California, and Utah, making one station to each one of the administrative districts.

The beginning of these stations marked the start of an activity which has had a most noteworthy development of the highest importance, but little more than the beginning will be noted here. The stations were very small affairs with staffs of two or three men only, and were at first regarded as purely local institutions concerned only with the immediate forest problems of a restricted area. The buildings in which they were housed were designedly given remote locations deep in the woods, the idea being to remove the investigators as far as possible from human distractions and put them in close communion with nature and in intimate touch with her problems. For some years after their establishment these stations were meagrely supported, and any expansion of the work was an impossibility. Pure research was further hobbled by a too rigid subordination to administration. Because of the scantiness of the resources several of the stations were closed, and some years subsequent to 1908 the work was concentrated in the remaining ones. Although the work gradually gained in importance and value, it, as a matter of fact, merely hung on for about a decade after the beginning until sentiment grew up that made its logical development possible. The story of that development will be told later on.

Hitherto we have taken occasion to refer to the great increase in forest revenues which very nearly coincided with the great rearrangement in forest affairs made possible by the consolidating act of 1905. Secretary Wilson's prophecy of that year—to the effect that the forests would not only pay their way but become producers of a substantial income—has been quoted.[69] Considerable expression was given to this thought about this time. One of the most forcible and most frequently employed arguments for the 1905 merger was just that same idea—that it would make the forests of the nation a concern having no use for red ink. President Roosevelt, for example, used that argument in his message of December 6, 1904, already referred to. Three years later he declared that "it is confidently expected that by 1910 the Forest Service will be entirely

[69] Secretary of Agriculture, Annual Report, 1906, p. 51.

self-supporting," [70] and on the basis of that recommendation he urged Congress to authorize the Secretary of the Treasury to advance five million dollars to the Service on the security of the standing timber as a " reasonable working capital," [71] the advancement to bear interest and to be repaid in annual installments beginning ten years thereafter.

Now this confident prediction has never—with the possible exception of the year 1907 [72]—panned out as per schedule; and because of that fact the Forest Service has been made the butt, upon divers occasions, for the barbs of sarcasm. It has been remarked, in a manner of speaking, that the country bought a horse described as of Derby calibre which turned out to be an indifferent dray puller.

The Forest Service maintains that the 1907 " run-ahead "—which was succeeded in 1908 by a rather impressive " run-behind "—could have been easily duplicated and greatly exceeded had the initial policy as regarded money-making been continued. It was not continued, runs the explanation, because it was ascertained to be a poor policy from the long run standpoint. Producing income immediately would have been spectacular, and would have made good on the pre-1905 promises, but it would have been a short-sighted policy. For one thing the big timberland owners would have been enabled to hoard their private holdings and get what timber they needed in their business from the public forests.

Again, it is pointed out, the cost of private grazing is very much higher than the national forest sort. Much more of a " take " could have been amassed from grazing fees had the fees been raised to the private level. For reasons of public policy this was not done.

Similar comment applies to the custom of giving small amounts of timber without charge to settlers and communities. No immediate and tangible return accrues therefrom, but the general benefits of such a policy, the public welfare aspect of it, are, it is maintained, so obvious as to require no argument.

[70] Special message of December 17, 1906.

[71] Secretary Wilson in his annual report, written some months after this special message, argued that a forest could no more produce without some outlay in the way of necessary improvements than could a farm. He stated at the same time that if the United States spent and earned as much proportionately on its forests as did Prussia, the annual cost would be $250,000,000 and the annual gross revenue, $650,000,000.

[72] Forest receipts in 1907 were $1,530,000, as against a cost of administration amounting to $1,500,000 and a total cost of $1,825,319.50.

Again our old friend "accessibility," whom we have met heretofore in New Hampshire, Florida and wherever else trees grow, has been a not inconsiderable factor in the situation. At the time the forests were created practically all the timber lands that were economically accessible had passed into private ownership. The national forests, therefore, in spite of the dropping of the vulnerable name "reserves," have been in very truth areas reserved against the day of the final depletion of the easily get-at-able stocks. Their remoteness from rail and rafting water, coupled with the existence of large areas of private timber more conviently located, has made the full realization of their yearly increment a matter difficult, if not, under all the circumstances, impossible.

Finally—and here is what has been perhaps the most compelling reason for the failure to make good on the enthusiastic prophecies—the personnel capable of administering large scale timber operations cannot be created with a wave of the hand. Neither can the technical methods indispensable to the successful completion of such operations be similarly evolved. The enthusiastic prophets had overlooked altogether—as is frequently the way with enthusiasm—that they were up against not merely a new thing, but a big and difficult thing. They were facing what was practically a new field of public land management. Very speedily Mr. Pinchot recognized that this meant going slow. Accordingly enthusiasm took in its horns. And after a further important reason for holding back on the volume of timber cutting has been the restraint which the Forest Service has had to impose upon itself to avoid over-cutting economic units.[73]

The Forest Service maintains, in short, that it could have both paid its way and shown a profit at all periods of its history since 1906, had it been good policy to do so; but that in the light of Secretary Wilson's admonition as to "the greatest good of the greatest number in the long run" the mere making of a good showing in

[73] As used here the term "economic unit" means some such natural topographical division as a watershed, a valley, a mountain side, or what not, the forest output of which is properly to be considered as a unit for the support of local industry or agriculture, or merely for its own efficient harvesting and exportation. It has been authoritatively asserted that there are many localities in which the exploitation of national forest timber could be enormously increased if the Forest Service policy of limiting cut to current growth were abandoned.

actual cash here and now to the possible damnation of posterity would be poor policy, bad business, bad foresight.

The period we have been considering came to an end on January 7, 1910, upon which date Mr. Pinchot was dismissed from the federal service by President Taft for disobeying the President's orders against the advice of his own immediate superior, Secretary Wilson.[74]

Into the rights and wrongs of the historic controversy of which this explosion was but one of the minor sputterings, we do not propose to penetrate. We have already, of necessity, wandered here and there about its purlieus, warily avoiding its heavily mined areas, and side-stepping its controversial pitfalls. The reader desiring more searching exploration will have to organize his own pack train.[75]

[74] See executive order of President Taft (No. 1142) dated November 29, 1909, Department of Agriculture, Annual Report, 1910, p. 891, also 61 Cong., S. doc. 719, pp. 1297 *et seq.*

[75] Mr. Pinchot quit the service January 7, 1910. Less than two weeks thereafter the joint resolution of January 19, 1910 (36 Stat. L., 871), was passed. On January 26, 1910, the investigation authorized by that resolution began. See 61 Cong., S. doc. 719. Another "occasion" was in process of being "profited by."

CHAPTER X

THE WORLD WAR AND AFTER

When the first American student of Forestry, was succeeded in the Forestership on the first of February, 1910, by Henry S. Graves,[1] a most unfortunate state of affairs—perhaps it would be a little more correct to say a state of mind—prevailed with respect to the national forestal situation. Bitter hatred, vindictiveness, and uncompromising intolerance were its salient characteristics.[2] It would not be strictly accurate to describe it as being divided into two hostile camps, each infinitely more concerned with encompassing the damnation of the other than with furthering "the greatest good of the greatest number in the long run." But that description is accurate enough for all practical purposes. Amid the din of controversy the problem of the forest was temporarily forgotten. Just so had another problem been forgotten in a clashing of selfish interests and dogmatic pomposities back in Broad Arrow days. Just so, and largely for the same reason, *i. e.*, a shortage of Howes.

Examples of this Boyne Day sentiment might be strung out indefinitely. On the one hand was the "timber thief" and "lumber baron" point of view, infuriated to the point of being ripe for a general lynching of lumbermen. On the other was the point of view of that purple-faced gentleman, rather too well dined, who pounded the table of a Puget Sound hotel at the writer and bellowed: "Future generations be damned; we want it now." Or of the gaunt small town lawyer in the same region who opined with bitterness that the East was trying to reduce the West to the status of a blankety-blanked Indian reservation.

[1] Henry Solon Graves, appointed to fill the vacancy on January 12, 1910, by President Taft. Mr. Graves had graduated at Yale a few years after Mr. Pinchot and had continued to follow in his footsteps by going to Europe to study forestry, the second American to enter the profession.

[2] It is true that these characteristics stood for surface extremes and did not represent the great bulk of common sense opinion on both sides. But it is equally true that at the day being written about, extremism was making such a terrific noise in the world as to create an appearance of being the whole show.

But it must by no means be inferred that this period was one of blind and furious reaction against the forestry movement, notable for forestry set-backs and baitings and nothing else. As a matter of fact there was never a reaction against the forestry movement in the true sense of the word, as has already been pointed out. This period is, in truth, more to be remembered for solid and enduring forestry advances than for forestry reverses. It was bound to be a period of advance because, if for no other reason, of the status forestry had come to occupy as a field of endeavor. It was no longer merely a new and "different" puddle for exotic dilettantes to dabble in. By 1910 it had clearly arrived at the state of an established American profession,[3] the future growth and importance of which were to be determined by just two things that were as certain to grow as scandalous rumors in a sewing circle. Those two things were "experience and necessity."

Of these advances referred to, three accomplishments of outstanding importance demand especial consideration. Two of them were consummated in this period of the Service's history; the other was inaugurated therein. These accomplishments were, first, the establishment of the Forest Products Laboratory, at Madison, Wisconsin; second, the enactment of the "Weeks Act";[4] and, third, the definite beginning of an effort looking to the adoption of a national forestry policy. In a sense the third was an outgrowth of, or a sequel to, the second, since one of the results of the second was a stimulation of the third. Inasmuch, however, as the working around toward a forestry policy on a national scale was very definitely the result of many causes, altogether apart from the adoption of this particular bit of legislation, it deserves separate and detailed consideration.

[3] Dr. Fernow's pioneer professional school at Cornell in 1898 had been followed by the Yale Forest School in 1900. Private instruction in forestry had been given as early as 1897 at the Biltmore estate of the Vanderbilts by Dr. Carl Alwin Schenck, a German forester, who had been imported to administer the estate forests. By 1910 there were twenty-two American colleges giving forestry degrees and forty others including the subject in their curricula. Some one thousand students were studying in these forest schools, and about five hundred foresters had been graduated therefrom.

[4] These two accomplishments though consummated in the period being examined, had been begun theretofore. For the Forest Laboratory idea's fruition Mr. Pinchot deserves and should be given great credit. The conception was not exclusively his, but it was his work that put it in the way of becoming a reality instead of a dream.

The establishment of the Madison laboratory is so clearly deserving of first place among the major achievements of the forestry movement as to leave no room for argument. The sheer practical value of the thing outweighs any spectacularity of the popular magazine or Sunday supplement type that can be matched against it.

Other forward steps have had their great significance—things like the creation of the first reserves in 1891, or the consolidation of forestry activities in 1905. But in no other development of the forest conservation idea has there been packed the amount of hard-headed, dollars-and-cents worthwhileness with which, from the very beginning, this great experiment has abundantly justified itself. From the outset, as has been shown above, the two great obstacles in the way of saner forest management have been, first, the inertness of a popular mind stupefied with the legend of inexhaustibility; and, second, the scepticism of a work-a-day world of affairs, prone to look with suspicion upon anything not of a purely—and patently—two-plus-two description. Of such scepticism had been "denudatic" and all that it connoted. In the nature of things the second of these obstacles exerted a tremendous influence upon the first. The fumes of the popular opiate could not be dissipated so long as the hostility of practical affairs furnished a continuing supply of drug. Winning practical affairs, therefore, could not but go a long way toward arousing the average man from his complacent belief in the perpetual existence of plenty. Therein lies the story of the great achievement of the Madison laboratory. It has done more to win the good opinion of practical affairs than any other one thing.

It will be of some interest at this point to take a look at the situation existing in the realm of wood and the products thereof at the time this experiment was entered upon—a situation that constitutes one of the curious paradoxes of the history of the race. Just when wood began to be used by man is a thing than can only be guessed at. To place it in "remote antiquity" is eminently conservative. It is one of those lake-dwelling, cave-dwelling, Cro-Magnon things, the measure of the age of which can only be put into figures in near-astronomical terms. Certain it is that wood was one of the first—if not the very first—material objects that man laid hold of in the beginning of his fight with nature. The first bow, the first canoe, the first man-made fire, the first rolling

log with its hint of the wheel—there is a universe of fascinating conjectural material in all of them. And the basis of them all is wood and the properties of wood. And yet in the year of grace 1909, man knew infinitely less about wood than about numberless other things—gold, iron, and copper for instance—the very existence of which was only dimly apparent to him long ages after the first arrow flew. The swineherd of Charlemagne, stolidly contemplating his grunting charges as they gobbled the mast, was doubtless shrewdly wise in porcine lore. But little he knew and less did he care about the oak the fruit of which created the succulent flitch.

And so has it been down through the ages. Basic wood, the first rung of the ladder of our upward climb, the thing that in hundreds of ways has helped us win what we call our civilization, we have taken little thought of.

All this is not to say that there has been no knowledge of wood accumulated. There has been much. But it has been neither exact nor scientific. It has been traditional, "they say," rule-of-thumb, acquired by the bowyers and fletchers and shipwrights and carpenters of the centuries in the course of their daily work. Father has told son, and son, grandson, of the resiliency of yew, the sturdiness of oak, the workability of pine. And until the opening years of the present century it had practically all been incidental knowledge. Man long ago deliberately shut himself up with test tube and crucible and ponderous tome to find out about this, that, and the other for the sheer sake of the finding. It has remained for our generation to take up this useful work with respect to wood.

To inquire into the reasons for this strange indifference toward a real fundamental would be to embark upon a boundless and uncharted sea of speculation; an adventure for which this book possesses neither the letters of marque nor the deck space. It must be enough to say that it has existed, and to rejoice that we have at last come to a realization of it.

In order to get the right perspective on the movement leading up to the actual founding of the laboratory, it will be as well to refer back a moment to the early attempts at experimentation under Dr. Fernow, and to read carefully the words he wrote in his report, as Chief of the Division of Forestry, for 1887:

The properties upon which the use of wood, its technology, is based, should be well known to the forest manager if he wishes to

produce a crop of given quality useful for definite purposes. Our ignorance in this direction has been most fruitful in fostering a wasteful use of our natural forests, and the same ignorance misleads even the forest planter of to-day in choosing the timber he plants and the locality to which he adapts it. How the Black Walnut has been sacrificed for fence material, how the valuable Chestnut Oak has rotted in the forest unused, how the Hemlock has been despised and passed by when it might have been successfully used to lengthen the duration of White Pine supplies, how timbers are now used in unnecessarily large sizes and applied to uses for which they are not adapted, while other timbers are neglected for uses for which they are adapted—all these unfortunate misapplications are or have been due to lack of knowledge of the technological properties of our timber.[5]

The importance of scientific forestry research, then, was not a thing that was first realized in 1909-10. It had been keenly realized more than two decades earlier, and, as we have already seen, the idea had not been entirely neglected. It had marched forward more or less slowly, and with varying vicissitudes, during the intervening years, achieving the turpentine success and some others, and had crystallized by 1905 into the Office of Forest Products in the organization of that year and various projects for studies of the mechanical properties of certain of the more important woods in coöperation with some of the universities.[6] It was in this coöperative way, indeed, that the greater part of the Service's research work was done prior to 1910.

In 1906-07 some changes in the organization of the Office of Forest Products were made. Two of its sections, Timber Tests and Lumber Trade, were amalgamated into Wood Utilization. Dendro Chemistry became Wood Chemistry. Two new sections, Forest

[5] The lack of efficient wood utilization in America was recognized by the more discerning long before Dr. Fernow's time. Beverley complained of the Virginians, in 1705, that "tho' their country be overrun with wood yet they have all their woodenware from England . . . to the eternal reproach of their laziness." And Dr. Schoepf, in 1784, tells of seeing a pine flagstaff in St. Augustine that had been brought from Norway, via England, at great expense, though as fine or finer staffs were growing on the town's outskirts.

[6] Purdue, Yale, University of California, University of Oregon, University of Washington. Later similar relations were established with the University of Colorado. Experiments were also conducted in a small laboratory at Washington and in a laboratory established at the Louisiana Purchase Exposition at St. Louis, by virtue of a special appropriation. Several of the leading railroads coöperated also in practical tests in regard to the seasoning, handling, and treating of tie and bridge timber.

Measurements and Reserve Engineering, were added. By 1908-09 the Office of Products had developed into the Branch of Products, composed of the offices of Wood Utilization, Wood Preservation, and Publication. The first-named of these new offices, in which was centered the work in wood chemistry, wood uses, drafting, and computing, early won recognition for work done in the subjects it handled.

The paucity of definite knowledge about wood was not the sole impellent toward research activities. Another and more directly practical reason lay in the terrific margin of waste that was—and indeed still is—apparently inseparable from forest utilization. Even to-day only 30 per cent of the wood in a forest gets into the form of seasoned, unplaned lumber, of which percentage an additional 10 to 25 per cent wastes away in the process of manufacture. In extreme cases as little as 3 per cent of the original forest content emerges from the factory as finished product.[7]

The principal trouble about this early system of investigation was the scattering of effort it involved. It would perhaps be putting it too strong to say that these earlier scattered efforts approximated a futile beating of the air, but it came nearer to that than to a solid, coördinated smash of achievement. Coördination of effort and a centralized handling of resources are just as important in research as they are in football or in the grand strategy of armies. Without them effort tends toward that atomization so well illustrated by the classic tale of the gentleman who simultaneously mounted all the horses in sight and galloped furiously in every direction.

Realization of this fatal defect had been impressing itself ever more strongly upon those charged with the research effort of the Service as the years went by. The obstacles in the way of betterment, however, seemed insuperable. Funds for research were altogether too scant for even dreaming of a Service research laboratory on an effective scale.

Dreaming, nevertheless, was indulged in. Speculation and the swapping of ideas naturally resulted and ultimately the proposition

[7] It might well be thought that in the manufacture of "Yankee oats", *i. e.*, shoe pegs—the margin of waste would be trifling. The Forest Service declares however, that even in this operation, which is still carried on in at least one American factory, there is a wastage of from 25 per cent to 50 per cent.

was evolved that if coöperation on a small scale with a host of universities was possible, a concentration of effort and resources should make effectual coöperation with one university equally so. Put up to a number of the leading universities for consideration, the idea was cordially received and a number of generous offers of assistance were forthcoming. Various considerations, among them convenient centrality of location, resulted in the acceptance of the offer of the University of Wisconsin. Under the terms of this offer the university was to furnish a suitable building, together with heat, light, and power; the Forest Service underwrote the laboratory personnel and experimental raw material end of it. Construction of the building was begun in the summer of 1909, and in the ensuing autumn the first equipment was installed and an organization of personnel sent out from Washington to take over the work. At about the same time, October, 1909, the Office of Wood Utilization was moved from Washington to Chicago, the change being made because of the centering in the latter city of many of the directing offices of the lumbering and wood-using industries. On June 4 of the following year the formal opening of the laboratory took place, a total personnel of forty-five being then on hand, drawn, for the most part, from the various research projects which had been under way in different parts of the country. The subsequent progress of the experiment will be gone into further along in this chapter.

Less than a year after the opening of the laboratory came the consummation of the second forestry advance to which we have referred. To the events leading up to that consummation we shall now turn our attention.

The proposed governmental purchase of lands in the eastern mountains for the creation of national forests in those regions was a much debated question between 1901 and 1908, and the sum of the effort, argument, difference of scientific opinion, and maneuvers in parliamentary strategy directly traceable to it makes up one of the most interesting episodes in forest history, some of the echoes of which are still audible.

Purely a Southern idea in its inception it became, after a year or two, all-Eastern in scope, when New England, with her White Mountains, claimed equal consideration with the Appalachians. This junction of forces was responsible for a special appropriation clause in the act of March 4, 1907 (34 Stat. L., 1269), providing

for a survey, by the Forest Service, of forest, land, and water conditions in the White Mountains as well as in the Southern watersheds. As a result the Secretary of Agriculture recommended, in 1908, the purchase and incorporation into the national forests of considerable areas in both regions. In December of the same year the Agricultural Committee of the House began hearings "On Bills Having for Their Object the Acquisition of Forest and Other Lands for the Protection of Watersheds and Conservation of the Navigability of Navigable Streams." [8] Attention is drawn to these hearings for two principal reasons.

The first has to do with the causes which the wording of the title of the hearings would seem to indicate as the underlying motive for the proposed acquisitions.

This was not in truth the case. The Eastern forests were wanted primarily as forests—as amplifications of the system already created. The basic purposes of that system were the wise and economic utilization of the existing timber resources on the public lands and the creation of further resources thereon by the forestation of cut-over land. The motives named in the title quoted were considerations, to be sure. But they were subordinate, not principal ones. Why then, it will naturally be asked, were they given principal prominence in the 1908 hearings? The answer must be, for practical reasons. For in spite of all that has been said in popular literature of the idealism of the forestry movement—and perfectly true, the greater part of it—there have been times when forestry has played the game as cannily as the best of them. In what has preceded, instances of this sort have been given without comment. Comment is made here partly because of the clear cut nature of the example, partly because of the new and epochal departure in forest policy to which it gave rise.

Practical methods are evoked by practical obstacles. The practical obstacle intervening here was the Constitution of the United States, under the terms of which, foremost legal opinion early pointed out, the creation of national forests by purchase was impossible. Arguments holding that the step could be taken under the general welfare clause, and others declaring the existence of precedent—such as Secretary Wilson's Blackfoot Lands argument—were declared untenable. The government, it was said, could not

[8] December 9, 1908, and January 28, 1909. 143 pp. (1909). See also Department of Agriculture, Annual Report, 1908, pp. 433-34.

go into the forest purchasing business for the direct purpose of creating forests unless the Constitution was amended.[9]

But at the same time it was pointed out that the desired object might possibly be attained by means of the commerce clause, under which Congress possesses the right to regulate commerce among the several states. To interstate commerce navigable waterways are naturally of commanding importance. If, therefore, it could be shown that the creation of Eastern forests would make the rivers originating in the watersheds covered by those forests more navigable, their acquisition might be possible under that theory. It was but natural, therefore, that in the ensung agitation, this minor phase should be stressed out of proportion to its bearing upon the real objective; and that the said objective should be kept discreetly in the background. Nor is it especial matter for wonderment that the zealous propagandists of forestry in their eagerness to demonstrate the connection between the forest and the river should have in many instances almost literally claimed the omnipotence of the forest with regard to water in the heavens above, the earth beneath, and the waters under the earth. "When our forests are gone," said one of them, "the streams will dry up, the rivers will cease to run, the rain will fall no more, and America will be a desert."[10] Even Mr. Pinchot is said to have declared that the presence of forests increased rainfall by 10 per cent.[11]

It is hardly necessary to remind the reader here that for very many years throughout the whole history of the forestry movement, in fact, there had existed a theory regarding a connection said to exist between forest growth and stream flow. Frequent expressions of it we have met hitherto.[12] In gist this theory was that on well

[9] In the course of the discussion over constitutionality, doubt was even expressed in some quarters that the then recently passed reclamation act of June 17, 1902 (32 Stat. L., 388), would stand the test if ever questioned before the Supreme Court. Up to this writing—July, 1927—this act has not been tried out directly on the merits before the Supreme Court. Consequently, no flat-footed affirmation of its constitutionality has as yet been made by our highest tribunal. Its constitutionality, however, has been affirmed by a lower federal court in the case of United States v. Hanson, 93 C. C. A. 371.

[10] Scrap Book, September, 1908.

[11] See p. 76 of 1908, Hearings above mentioned (Footnote 8). Probably the advocates of rainmaking who tied their experiments to the forestry appropriations in 1890 and 1891 would have considered this conservative.

[12] Such as the "scant of water" bill of 1876, and the cries of alarm in farm journals of the sixties and seventies. And as early as 1893 a study on

forested watersheds, the humus, or forest floor, possessed sponge-like qualities which insured an easy and gradual absorption of the rain and snow water into the soil, with a following easy and gradual delivery of the same to the rivers by way of the intermediate brooks and springs; the process being facilitated also by the obstruction offered to precipitation by the trees themselves, causing much of the rainfall to reach the ground by easy stages, so to speak, rather than *en masse*. The complement of the theory was that when forest cover was removed there was a sudden and violent run-off accompanied by an eroding of the top soil and its deposit in the beds of streams and rivers in the form of silt, sand bars, etc. Deforestation, therefore, was claimed to be responsible for our disastrous floods and for the unsatisfactory navigational conditions of certain of our rivers.

This theory is both simple and attractive and is, in consequence, well calculated to appeal to the average mind. Even to minds above the average it is, up to a certain point, a self-evident proposition. Thus, it has never been questioned that, other things being equal, a wooded slope will erode less readily than a bare one; or that the forest humus will absorb and hold rain, that, on a slope absolutely barren of vegetation, would, like the Scriptural swine, run "violently down a steep place into the sea."

But that the advocacy of the movement did in certain of its phases verge on the extravagant, is undeniable. The thing was overdone, with the result that a chorus of dissent arose. This protest, by the bye, was less notable for numbers than for the standing of its individuals and the arguments they put forth, and for the fact that those individuals were, in general, not only friendly to the forestry movement but entirely favorable to the creation of the Eastern forests. The giving of a couple of illustrative examples will bring us to the second of the reasons for stressing the December, 1908, hearings.

"Forest Influences" was published by the Department of Agriculture, to which contributions were made by Dr. Fernow, Professor Cleveland Abbe, and others. Professor N. S. Shaler, the distinguished Harvard scientist, advocated the creation of reservations about the headwaters of rivers in order to regulate their flow, in 1889. See Vol. II, No. 2, February, 1889. The preservation of stream navigability was the basis of the argument for the establishment of the New York Adirondack Forest in 1891. See *Forest Leaves*, III, No. 5, March, 1891. The securing of "favorable conditions of water flows" is one of the alternative purposes prescribed by the law of June 4, 1897 (30 Stat. L., 11), as necessary for the establishment of a forest reservation.

Those hearings should be read not only by everyone desiring a source picture of the development of the movement for the conservation of America's forests, but even by those who seek the merely interesting. The testimony of the venerable Edward Everett Hale, for example, makes a rare bit of reading, with its striking allusions to Broad Arrow days and the part played by New Hampshire spars in eighteenth-century naval warfare. This was made in connection with an interesting argument directed to the precedential validity of the early acquisition of the live-oak reservations for naval purposes.

But with particular regard to the matter under present examination the point of commanding interest in the hearings lies in the inclusion therein, in an appendix, of an article by the late General—then Lieutenant-Colonel—Hiram M. Chittenden, of the Engineer Corps of the Army, which had been published, in the preceding September, in the Proceedings of the American Society of Civil Engineers [13] and which, because of the vigor and clarity of argument which marked it, and because, also, of the author's eminent professional standing and unquestioned disinterestedness, had already attracted wide attention.

Colonel Chittenden's paper was in fact the first complete expression of the views of a not inconsiderable, but theretofore largely silent, section of scientific thought that was unconvinced of the existence of any such vital relationship between forest and river as was claimed by the proponents of the proposed legislation. The silence was no doubt largely due to a natural reluctance to maintain an unpopular thesis. It remained for Colonel Chittenden to bell the cat, a service which he most creditably performed with an array of facts and figures of unquestioned authenticity presented in a most telling and readable style.

Space does not admit of any extensive presentation here of the paper's points. It is readily available and speaks for itself. Right or wrong, it is certainly one of the most striking documents of the history of the forestry movement and should be read by everyone desiring a complete picture thereof.[14]

[13] "Forests and Reservoirs in Relation to Stream Flow, with Particular Reference to Navigable Rivers," XXXIV, 924 (1908); also in Cong. Record for February 9, 1909, pp. 2102-21.

[14] Colonel Chittenden's paper was replied to by President Swain, of the Massachusetts Agricultural College. This reply, together with a rejoinder thereto by the Colonel, is also published in the appendix to the 1908 Hearings.

Briefly, Colonel Chittenden maintained that forests did not, and could not, exercise any regulating influence upon stream flow in times of great floods or extreme low water; that there had been higher high waters and lower ones[15] in the days before the forests had been cut away; that forestation did not produce precipitation; and that it was at least questionable that deforestation had any appreciable effects upon the silting-up of river channels. In support of this last proposition the Colonel brought forward several strong arguments. Attention will be drawn here to but one of these.

The Mississippi River was cited very frequently as the classic example of the result of denuded watersheds. Because of the lack of proper forestation upon the upper reaches of its tributaries, it was alleged, the Mississippi was flooding disastrously, was constantly silting and barring up, and was every year carrying to the sea immense quantities of fertile top soil.[16]

Colonel Chittenden admitted the floods, but claimed they were due to precipitation rather than lack of forestation. He also conceded the vast amounts of eroded earth, but he pointed out, in this connection, that by far the larger part of it was brought down by the Missouri—familiarly known from the earliest pioneer days as the "Big Muddy"—and that the Missouri for the greater part of its course flowed through flat, treeless, ofttimes arid regions, carving out its vast quantities of silt from its banks and not receiving it from denuded and eroding watersheds.[17]

[15] The Lake States forests were very far from being eliminated in 1855, yet in May of that year the upper Mississippi was so low that navigation was almost totally suspended. Steamboats had to drag scows around with them whereon to lighter their cargoes in crossing bars. The river seemed intent, it was said, "on descending from its dignity as Father of Waters into the less than mediocre position of a common stream."—*St Paul Pioneer*, May 26, 1855. And that there was sometimes very low water in the Pacific Northwest long before a "timber thief" or a "lumber baron" invaded that region, we have the testimony of Sergeant Gass, who, in his diary of the Lewis and Clark expedition, speaks of the excessive lowness of the Columbia River when the expedition first came upon it.

[16] 400,000,000 tons of it yearly according to Mr. Pinchot. See "The Fight for Conservation," p. 124.

[17] A view that would seem to be sustained by the observations of the early explorers. Marquette, for example, descending the Mississippi in 1673 saw the Missouri as a "torrent of yellow mud, rushing furiously athwart the calm blue current of the Mississippi; boiling and surging, and sweeping in its course logs, branches and uprooted trees." Nine years later LaSalle saw it as a "headlong torrent opaque with mud." To Charlevoix, in 1721, it seemed to enter the Mississippi "like a conqueror, carrying its white waters, unmixed, across its channel quite to the opposite side" and imparting a muddy color to the greater stream throughout the rest of its course.

Colonel Chittenden expressly disclaimed any hostility to either the forestry movement or the creation of the Appalachian forests. He stated that he was entirely friendly to both ideas. His dissent was to an argument for a cause; not to the cause itself. It was not to have been expected, therefore, that his incisive paper would exert any considerable influence upon legislative opinion. It was not meant to do so, and it is to be doubted if it changed a single vote. To the opposition it did lend a little temporary aid and comfort—an opposition that would have existed had the paper never been written. The result of the hearings was a majority report favoring the legislation. A minority report, which made full use of the Colonel's thunder, opposed it. The bulk of popular and journalistic opinion of the day either favored the extension of the forest system or was apathetic. Such a state of public thought is not to be swayed by an expression of opinion, no matter how able, that merely points out the invalidity of the means, the while it is in full accord as to the desirability of the ultimate end.[18]

But although the views of Colonel Chittenden and of those who held with him could not stay the tide of popular demand they could, and did, stir up thought and discussion. During 1909 the forest-river controversy, although less considerable, was no less sharply defined than the Cook-Peary question, which caused friends to fall out during the same period. We get a cross-section of this general difference of opinion in the estimate hearings that year before the House Committee on Agriculture. The point bobbed up with the Chief of the Weather Bureau explaining his desired appropriations. Appealed to as an expert by certain of the differing members, and replying that he was making some studies on the subject that might lead to definite conclusions, he was ordered by the chairman to complete his investigations and report thereon. This he did; and

[18] The American Society of Civil Engineers went on record as favoring the creation of the eastern forests. But its Special Committee on Floods and Flood Prevention, which made an exhaustive investigation of the entire subject, was in substantial agreement with Colonel Chittenden in its final report, submitted in 1916; namely, that forestation up to a certain point exerts a restraining influence upon run-off and erosion, but is, with respect to flood control and the silting-up of rivers, still an unknown quantity. See Paper No. 1400, *Transactions*, LXXXI, 1218-1310. Of especial interest in this paper is a quotation, at p. 1258, from the report of the Director of the French Department of Forests and Waters on the great Seine flood of 1910. It is worth reading.

the document was printed the following year by order of the committee.[19]

This paper of Dr. Moore's lacks the forthright style of Colonel Chittenden and is, to that extent, less immediately convincing. It is, nevertheless, a document of very great interest that the student of forest history can in no wise afford to overlook. The conclusions of the author are, in all essential details, in agreement with those of Colonel Chittenden. Like Colonel Chittenden, Dr. Moore was a forestry advocate, but a dissenter from the extreme forest-river theory. His standpoint is well summed up in this quotation:

> Forests should be protected; but it is injuring a good cause to attempt to bring to its support the false reasoning and mistaken conclusions of enthusiasts no matter how well-meaning they may be or how devoted to high and lofty purposes.

As might be expected of a weather man Dr. Moore laid especial emphasis in his paper upon the then-mooted question of the influence of forestation upon precipitation and climate, a matter which the Colonel had handled rather incidentally. He declared that forestation has no effect on climate, and little, if any, effect upon precipitation; rather the other way around—that the rain makes the forest grow and the forest does not make the rain fall.[20] Pat to this point are two other opinions of weight which found expression during this same period. The late Dr. Cleveland Abbe, then Meteorologist of the Weather Bureau said:

> There is no well-authenticated case of an appreciable change in climate within the past two thousand years . . . neither is it possible that any change on the surface of the earth due to man—such as deforestation—can have had anything more than the slightest local effect on climatic phenomena.[21]

[19] The Influence of Forests on Climate and on Floods, by Willis L. Moore (1910).

[20] An earlier observer, Dr. Benjamin Rush, who had been Surgeon-General of the Continental Armies, spoke, in 1787, of an *increase* in rainfall which had followed the clearing away of the forests. See Vol. 1, p. 10, of Morrison's translation of Schoepf's "Travels in the Confederation." Of great interest also on this point is an article by J. B. Leiberg, in the *National Geographic Magazine* for May, 1899, entitled "Threatened Aridity on the Pacific Coast," in which the dependence of forestation upon precipitation is strongly set forth. In the same magazine for May, 1901, Henry Gannett drew attention to the fact that although the main Alaskan coast was densely timbered, Kodiak Island and vicinity and the Alaska Peninsula and the Aleutians, enjoying the same rainfall, climate, prevailing winds, and absence of fire, were absolutely treeless.

[21] December, 1908, Hearing, p. 115.

And Professor Alfred J. Henry, of the same bureau, in his report on the climate of the Southern Appalachians,[22] said:

It is a mistake to suppose the forests *per se* tend to increase precipitation. The precipitation would be equally heavy, forest or no forest.

All in all there was marshalled against the arguments for the legislation a body of evidence that was, to put it conservatively, not to be laughed out of court or discounted with the stigma of bias. There was not a great deal of it, because it was unpopular, but it was the sort of evidence that gives pause to thoughtful and unemotional men. The question it raised is still far from being satisfactorily answered.[23]

Out of all this argumentative hubbub of disagreeing scientists and strident propaganda, there had evolved, by late 1910, a very pretty legislative impasse. The legislation was generally wanted, beyond question. But it couldn't be had by direct methods; the Constitution stood in the way. As to a flank movement, however, there was a bit of hope. The House Committee on the Judiciary, reporting on the question of constitutionality, in 1908, had said that if it appeared that forest reserves would aid navigation, Congress had the power to acquire such reserves.[24] But there, too, an obstacle developed in the shape of Colonel Chittenden, with his vast knowledge of American rivers acquired by years of practical river work and his uncomfortable perspicuity. The scheme was in fact hemmed in, and was up against the alternative of either quitting out of hand or of ramming through one of its obstructions by main force. Obviously direct action within the Constitution was out of the question. But the over-riding of a scientific viewpoint that was backed up by no considerable body of popular interest was no very difficult matter. That is what happened to the Chittenden-Moore viewpoint. It was steam-rollered in the final thrust of the movement that culminated, March 1, 1911, in the enact-

[22] Published as an appendix to the special message of President Roosevelt 57 Cong. 1 sess. S. doc. 84 p. 150.

[23] Scientific opinion not connected with the Forest Service was not wanting on the other side. See paper of M. O. Leighton, Chief Hydrographer of the Geological Survey, on floods and the influence of deforestation thereon at Vol. II, p. 95, of the Report of the 1909 Conservation Commission (60 Cong., S. doc. 676). Considerable of Col. Chittenden's fire was directed at Mr. Leighton's argument, and at times his shooting was excellent.

[24] 60 Cong., H. rep. 1514.

ment of the epochal "Weeks Act" (30 Stat. L., 901), the purpose of which, as stated in its title, is "To enable any state to coöperate with any other state or states, or with the United States, for the protection of the watersheds of navigable streams, and to appoint a commission for the acquisition of lands for the purpose of conserving the navigability of navigable rivers."* Thus was a legislative devil beaten around the stump by a bit of the time-honored strategy of the horse market.

In the months immediately preceding the final success of the movement, there developed out of it an event of great scientific interest, and, it may be, most important consequences. The alignment of the Weather Bureau leaders more or less completely with what may be called the forest skeptic school very naturally created between that bureau and the Forest Service a difference of opinion, one, however, it should be said, that has always been, apparently, an entirely friendly one. This difference quickly engendered on both sides a desire to get away from futile argument to the scientific testing-out of the entire matter in dispute.

So in 1910 the two bureaus got together, with the permission of the Secretary of Agriculture, in a coöperative agreement to conduct an experiment extending over a long period of years; in order to determine, if possible, the effects of the forest upon climate and stream flow, including the disposition of rain and snow water, its run-off, storage and later appearance in springs; and, also, the possibility of erosion and the silting-up of streams.

An area for this test was selected in the Rio Grande National Forest near Wagon Wheel Gap, Colorado, consisting of two forested watersheds, each about two hundred acres in area, and each containing a stream about one mile in length, with a difference in elevation between head and mouth of some eighteen hundred feet.** The agreement provided for the stationing upon the area of a joint observation personnel to be selected from the two services; and for the installation thereon of the necessary weirs

* The navigational limitation upon the Federal government had been given expression also by that National Waterways Commission, which had been created by Congress by the act of March 3, 1909 (35 Stat. L., 818). In its preliminary report, rendered January 24, 1910, the Commission said: "It should always be borne in mind that the waterway improvements made by the Federal Government under the exercise of its authority should be restricted to navigation."—61 Cong., S. doc. 301, p. 20.

** Department of Agriculture, Annual Report, 1910, pp. 391, 393.

and of an equipment of automatic and other devices for the accurate observation of stream flow and meteorological conditions. The observation of the area was to include two periods of from eight to ten years each. During the first period the original forested conditions were to be maintained. Then one watershed was to be completely denuded and burnt over and the second period of observation completed with the area in that condition—half forested, half denuded. The two watersheds selected were believed to be as nearly identical as could be found in all essential respects; and the unique experiment was begun in high hopes that its results would definitely settle a long-disputed question and enrich the sum of human knowledge with exact and usable data of a valuable nature. The progress of the experiment will be gone into toward the close of the chapter.

For two principal reasons this matter of agitation for a consummation of eastern forest legislation has been treated at somewhat disproportionate length. The first of these reasons has already been made apparent; namely, the securing of the legislation by a sort of *ruse de guerre*. Now neither this nor what has already been said is to be taken as meaning that the propaganda was deliberately untrue. A great deal of it was unquestionably exaggeration. Some of it was the presentation as established truth of that which was not then, and is not now, definitely known to be true. But in passing judgment upon this circumstance the temper of the time is to be taken into consideration. Public opinion wanted the innovation, and public opinion, then as always, is apt to be a bit near-sighted on the side of its desires. The enthusiast, afire with crusading zeal, believes unquestioningly everything furthering the cause to which he has devoted himself. And the indolent-minded type of good citizen, the man in the street, satisfied more or less instinctively of the wisdom of a movement, will not bother himself overmuch with nice scientific objections to the movement's propaganda. No doubt there were a few men who knew very well that more was being claimed for the forest than the facts justified, but who figured that the bigness of the game was well worth the burning of an apocryphal candle. But when all has been said the movement as a whole was every whit as honest and sincere as the average, and its rallying cries were no more exaggerated than many a shibboleth of the past that has gone down into history

honored and revered. And as to the somewhat misleading label under which the proposition was "sold" to the country, it is to be remembered that ours is a representative government and that oftentimes desirable and in every way worthy legislation is only to be had after preliminary jockeying as elaborate as that which used to precede eighteenth-century sea fights. After all "it is an old maxim in warfare—political or otherwise—that the attack should be driven at the most vulnerable point." And there you are. In this case the forest could not be carried by direct assault, but could be taken by creating a diversion at the river.

The second reason has to do with the actual worth of the legislation and with its true significance as a measure of far-reaching importance. There never has been, and, even more emphatically, there is not now, any difference of opinion worthy the name as to the great value of the Eastern forests in a far-seeing economic sense. This fact is well illustrated in that pro-Chittenden flood control report of the American Society of Civil Engineers referred to above. Therein it is said:

> If reforestation is considered merely from a commercial standpoint, the value to the country of reproducing our timber is so great that it obtains general approval, particularly of engineers who appreciate more than any other class the disadvantages to which the country will be subjected by the destruction of its forests.

Disregarding the forest-river and the forest-climate theories altogether, the Eastern forests were worth while for many reasons, of which it will suffice to cite the following: One, as strategic points in forest fire prevention; two, as demonstration areas in scientific forest management, reforestation, etc.; three, as great national game preserves and recreational areas; four, as an anchor to windward with regard to our national stock of hard woods; five, and principally, for another reason to be gone into more fully later on.

The final extension of the national forest system to the East [27]

[27] It would be more accurate, perhaps, to say the extension of the national forest system in the East, the adoption of a general policy of Eastern forests. The first national forests in the East were created out of the public domain, three years before the Weeks Act was passed. There were the two forests in Florida, created by presidential proclamation in 1908. The Florida forests were, thus—if one ignores the old naval reservations—the first national forests in the continental United States east of the Mississippi. The continental qualification is inserted because of the establishment of the Luquillo Forest in Porto Rico in 1903. A forest was established in Kansas in 1905. Others were created in 1908 in Arkansas, Minnesota, and North Dakota; in Michigan the year following.

has been referred to as epochal. This is a large statement, but in this case, it is none too ambitious a phrase. For the passage of the Weeks' act meant more than the mere enactment of a new piece of forest legislation. It marked the final passing of governmental forestry out of the tentative into the fixed and definite. Theretofore the forest activities of government, though their growth had been impressive, not to say spectacular, had been, after all, only a withholding of the remnants of the nation's forest patrimony. Now they were to be that and something more—the actual buying back of forest lands which had been allowed to pass into private ownership. From the first position withdrawal is conceivable; but scarcely from the second. Mere conservation, a maintaining of the *status quo,* now had added to it definite creation, a moving forward. 1876, 1891, 1897, 1905—these are all red-letter forest years. But 1911, a year of the same hue, deserves somewhat larger type, for it puts the seal of finality upon them all.

As has been already stated, one outstanding reason for the worthwhileness of this legislation demands separate and detailed consideration which will be given it further along in the narrative. Minute examination of the law at this point, therefore, would be unnecessary. It will be enough to draw attention, very briefly, to its two main features, ensconsed behind their camouflage of navigability of streams. The law simply clears the way for two things—first, a coöperation of forces and a unification of effort throughout the entire country in attacking the general forest problem that suggests the big idea that Dr. Warder brought back from Vienna in 1873; and, second, the extension of publicly owned forest areas by purchase. The ways in which these two things make for greater certainty, greater control, greater efficiency in forest affairs are so obvious as to require no comment. The crying need for such certainty, control, and efficiency we have noted at many a point 'twixt here and the days we decided to build those six frigates of live oak. Obvious indeed! But something else is also obvious—a vastly bigger federal thumb inserted vastly deeper in the local pie.

With the passage of the act, steps were at once taken toward the organization of a unit to be charged with the detail of examination and acquisition of purchase areas. By March 27, proposals for sales of lands in the selected areas had been invited, and by the

close of the fiscal year, on June 30, proposals covering a million and a quarter acres had been received. The initial purchase of some eight thousand acres in North Carolina had been fully consummated by November of the following year.

Let us now go back for a moment to the tense days of early 1910 and examine certain occurrences of the time that are fairly reflective of what was in the wind.

Previous to January 15, of that year, all legal work of the Forest Service had been performed by a branch of the Service itself designated as "Law." This branch was composed of a law officer and assistants in Washington, and assistants in each one of the six forest districts set up by that reorganization of December 1, 1908, to which reference has already been made.[28] These law officers besides attending to strictly legal matters handled several divisions of administrative work as well.

It may very well be that from the standpoint of personnel, or efficiency, engineering, this arrangement was admirable enough. Under ordinary, and less hectically embittered, circumstances there would have been, in all probability, no particular reason for changing a system, the practical effect of which was the setting up of a private legal department for the Forest Service, nominally under the Solicitor's scrutiny, but actually under the supervision and direction of the Forester alone, and, very naturally, strongly imbued with his viewpoint. In a forestal era of good feeling such a disposition of the necessary law forces might have much to commend it. But we know very well that the era of which early 1910 was the culmination was not that sort of period. We know that it resounded with the charge that the Forest Service had been officially petted and spoiled, that the Forest Service did what it pleased, and that it ran the Department of Agriculture. That such an arrangement should continue, therefore, with affairs at such a temperature, was of course impossible, and one of the almost immediate results of the removal of Pinchot was its abolition by Secretary Wilson's general order of January 15, 1910 (No. 138), directing that the legal work of the Forest Service be thenceforth performed under the "immediate supervision and direction of the

[28] See Department of Agriculture, Annual Report, 1910, pp. 440, 441.

Solicitor for the Department of Agriculture";[29] an action that was buttressed a little later by the agricultural appropriation act of May 26, 1910 (36 Stat. L., 416), a clause in which provided for the performance of all legal work by the Department, without exception, by the same officer.[30] This was tantamount to a recognition, or, better, a formal confirmation, of the Office of Solicitor of the Department of Agriculture, which office had been created June 17, 1905, by General Order No. 85. Final consummation of the matter was effected June 9, 1910, by the Secretary's General Order No. 140, which formally abolished the old intra-service legal department, effective July 1, 1910, and created the new system under direct control of the Solicitor.[31] In name and in form only the old system was retained until the latter date, in order that the Solicitor might have an opportunity to survey the large field in which his control had now become active instead of passive, and to devise a scheme for the efficient exercise of that control. In the course of that bit of reconnaissance he visited the several forest districts, and one result of that personal contact with field problems was a further tightening of departmental control over Forest Service affairs. This was in connection with mining and agricultural claims instituted in the several forests.

Part of the regular duties of forest supervisors and rangers at that time was the making of reports upon the validity, *bona fides,* etc., of such claims made within their respective jurisdictions; upon which reports the Department of the Interior was bound to rely—under the terms of an agreement entered into by the Interior and Agricultural Departments in 1906[32]—in determining whether a claim should be honored, and patent issued. In brief, the General Land Office, under this agreement, had no choice but to reject a

[29] This order also laid it down that the disbursing and accounting work of the Forest Service should be performed under the immediate supervision and direction of the departmental Chief of the Division of Accounts and Disbursements; and that all publicity work of the Department—including, of course, the Forest Service—should be first approved by bureau, office, or division chiefs and then submitted to the Secretary before publication.

[30] This act also confirmed the Secretary's action regarding Forest Service accounting. Department of Agriculture, Annual Report, 1910, pp. 133, 892.

[31] Department of Agriculture, Annual Report, 1910, pp. 34, 144, 793, 795. 870, 871, 890, 892-94. Also compare organization charts of January 1, 1909, and June 30, 1911, in Annual Reports, for 1908 and 1911 at pp. 441 and 346, respectively.

[32] *Ibid.,* 1906, pp. 270, 271. See also *North American Review,* for April, 1910, pp. 468-71.

claim if the Forest Service reported upon it adversely. The claimant was then definitely blocked, unless he had the time and the means and the patience to carry through a contest.

Where a claim was patently a dishonest one—and unquestionably there were many such [33]—this system worked simply, directly, and well. But the Solicitor discovered that certain of the forest officers, in an excess of what he mildly termed "commendable zeal," had fallen into the habit of reporting adversely upon practically everything, their theory being, apparently, that the *prime desideratum* was to keep the forests absolutely in *statu quo* whether just or unjust. In other words, they seemed to regard the passing of any piece of land out of their control as a calamity.

The result of this finding of the Solicitor was the issuance of a new order by the Secretary of Agriculture on June 28, 1910, enjoining district foresters and district law officers to refrain from sending adverse reports on claims to the Department of the Interior, until all the facts had been laid before him for determination as to whether they justified putting the claimant to the expense of a hearing.[34]

Naturally this episode made necessary a revamping of the claim contest system; in the shape of a new agreement between the two departments, entered into the same month, Secretary Wilson's "show cause" order was issued. Under this agreement the Department of Agriculture was recognized in the Department of the Interior as an active contestant in all claims cases in which adverse reports were made by forest officers. Its law officers were given leave to attend, and participate in, all hearings for the taking of testimony ordered by the Interior Department, and were accorded the right of appeal from decisions of the Commissioner of the General Land Office.[35]

Another bit of rein-tightening that came the Forest Service's way about this time had its inception outside the Agricultural Department. This was the provision in the agricultural appropriation act of March 4, 1911 (36 Stat. L., 1244), calling upon the Service for a detailed report upon the spending of all monies coming into its possession from July 1, 1899, to June 30, 1910.[36]

[33] Department of Agriculture, Annual Report, 1913, pp. 138, 139.

[34] *Ibid.*, 1910, p. 875. See also "The Other Side of Conservation," by George L. Knapp, *North American Review*, April, 1910, pp. 465-81.

[35] Department of Agriculture, Annual Report, 1911, p. 256.

[36] A period which practically coincided with the Pinchot administration.

This called for a well-nigh monumental bit of stocktaking and checking up and kept a large part of the personnel busy for several months. It made necessary a line-by-line analysis of some one hundred and sixty-five thousand vouchers covering disbursements of over sixteen million dollars. All property on hand had to be tabulated, down to screw-drivers and mouse traps.

The results of this intensive survey were transmitted to Congress by Secretary Wilson, April 1, 1912.[37] Perhaps their most important disclosure was in showing that the net cost of the forests from 1905—the year in which the Forest Service actually took charge—to 1910 was something under six hundred thousand dollars annually. The figure was arrived at by deducting receipts, value of permanent improvements, and value of property on hand from gross expenditures. It was not a figure that exactly bore out the pre-1905 "paying-their-own-way" predictions, but for all that, it was maintained, it was not so bad a showing for the protection of property that was worth two billions, and that was increasing in value at the rate of fifty million dollars per year; to say nothing of its benefits to the stock industry and to water resources.[38] And it was also claimed that the classification of expenditures completely disposed of one charge which had been hurled at the Service in the recent outcry—that of pernicious propagandizing at public expense.[39]

In a general way the Forest Service may be said to have come, by the end of the fiscal year following the one in which the events just narrated occurred, to the form and the stature it possesses to-day.[40] There was a main office in Washington organized administratively into six branches under the general direction of the Forester and his Associate. Each branch handled one of the following subjects: Operation; Grazing; Lands; Appalachian Work (*i. e.*, matters under the recently enacted Weeks Act); Products, and Silviculture. This organization, under the general direction of a district forester, was duplicated in each one of the six forest districts into which the country had been divided—with the obvious exception, of course, that no "Appalachian Work" was performed in the districts—when the discovery was made,

[37] They are to be found in great detail in 62 Cong., H. doc. 681.
[38] Department of Agriculture, Annual Report, 1912, p. 446; 1913, p. 41.
[39] *Ibid.*, 1912, p. 469.
[40] Cf. chart of organization of June 30, 1911, at p. 346 of Report for 1911.

in 1908, that too much centralization and too little localization made for over-rigidity. This organization administered a total net forest area of over one hundred and sixty-eight million acres, with a personnel numbering slightly over twenty-six hundred. For the performance of that work it had an appropriation of $5,954,898.52.[41] Its legal work was performed under "the immediate supervision and direction of the Solicitor" of the Department. About its accounting there was placed a similar superintendence through the instrumentality of the general departmental Division of Accounts and Disbursements.

Now, as has just been said, this arrangement, so sketched, presents a very good picture, in rough outline, of the Forest Service and its work in the present year of 1928. With some few and minor exceptions the Service does the same work to-day, in the same manner, and with the same kind of a force, that it did in 1911. Naturally, more than a decade of time will witness some changes in a work of the character and importance the Forest Service is performing. There have been enlargements here, contractions there; realignments and shiftings of emphasis. But they have been minor, not major; changes in detail, not in the general scheme. There remains to be recorded therefore, as of the years between 1911 and 1928, little more than the regular routine of the Service's work, as affected by national and world events of the period in which it was being performed. The fact that that period has been anything but a commonplace one, however, is sufficient guarantee that the coincident story of the Service is not by any means a dull one.

The investigation of the lumber industry by the Bureau of Corportations of the Department of Commerce and Labor, which had been called for by congressional resolutions late in 1906 and early in 1907, had proceeded sufficiently by 1911 to produce some concrete findings, a preliminary report being submitted to the President on February 13 of that year, and transmitted by him to Congress on the day following.[42] Two years later, on January 20, 1913, the first part of the final report was submitted. Parts 2, 3, and 4 appeared in April and July of the following year.[43]

[41] Department of Agriculture, Annual Report, 1911, pp. 343, 348, 350.

[42] 61 Cong., S. doc. 818.

[43] The final report was published by the Bureau of Corporations in three volumes in 1913 and 1914.

This report contained a great deal that was of interest and value, of which perhaps the outstanding element was the estimate of the amount of timber then standing. This estimate was reached after the most comprehensive and methodical investigation which had been made up to that time; as painstaking and accurate a survey as could have been made short of an actual physical canvass of the forests—a thing that would be enormously expensive and take a very long time. It showed that there were then standing some twenty-eight hundred billion board feet of merchantable saw timber, of which twenty-two billion board feet were privately owned.[44]

As compared with the many estimates which had been made in the preceding twenty years these most recent figures presented some rather striking contrasts. Most of these earlier estimates were frankly recognized to be little better than mere guesses. Of the principal ones, which had been published in a Forest Service circular [45] of April 24, 1907, only two were generally regarded as worthy of any consideration. One of these was Gannett's estimate for the Twelfth Census, 1900; the other one was attributed to Fernow's "Economics of Forestry," published in 1902.

Now, not allowing for the timber cut in the intervening years, the new estimate exceeded that of Gannett by over 100 per cent, and was 40 per cent greater than Fernow's. It stood for a timber supply that, figuring at the Forest Service's estimated rate of yearly drain of fifty billion board feet, would last the nation for fifty-five years—this taking into account neither new growth nor increase in consumption. It was a figure that did not hide the bottom of the bin, to be sure; but that was, compared to Carl Schurz's estimate in the seventies of a supply good for only twenty years then, very comfortably reassuring. It was manifest that Schurz had been "viewing with alarm."

As to the matter of the concentration of ownership, the report showed that whereas three-fourths of the timber then standing had been publicly owned forty years before, four-fifths of the same timber was privately owned at the date of the report. Of this four-fifths, 10 per cent belonged to three holders, 50 per cent to some two hundred holders.

[44] The estimate concerned itself only with the board foot unit, *i. e.*, 1 ft. x 1 ft. x 1 inch, and took no account of timber fit only for poles, posts, and firewood. It did not bother about the actual cubic content of trees.

[45] No. 97.

The report was devoted principally to the matters of supply, value, and concentration of ownership. But it also contained a most interesting chapter on the subject of our public land policy, to which it pointed as the primary cause of the shift in ownership just referred to. It is a thorough history of one of the unfortunate but inevitable phases of our national development.

The report recommended, among other things, the

> desirability of maintaining the integrity of the national forests and of extending to other publicly owned timber, including forests in Alaska and timberlands that may be recovered in forfeiture suits now pending or subsequently instituted by the Government, the cardinal principle of the national forest policy, namely, the retention of the fee to such lands at least until the timber is removed.

It also recommended a thorough timber census of all the forested areas in the country—a thing that both the Forest Service and lumbermen have been urging for years; arguing in support thereof that the unquestionably heavy expenditures that such a stock-taking would entail would be more than justified by the data obtained; data that should go far toward making future movements in forest policy more certain than conjectural.[46]

A legislative outgrowth of the forest agricultural claims matter developed in 1912. In the act of August 10 of that year (37 Stat. L., 279) appeared a couple of clauses making it mandatory upon the Secretary of Agriculture to do those things which the forest homestead act of June 11, 1906 (34 Stat. L., 233), had left largely dependent upon his discretion—the gradual elimination from Forest Service control of lands more valuable for agriculture than for straight forest uses. This legislation was repeated in the following year (Act of March 4, 1913; 37 Stat. L., 837) and has since been a regular feature of every agricultural appropriation act.

There was also enacted in 1912 legislation bearing upon the question of the forfeiture of the Oregon and California lands to which

[46] The reader will recall what Gannett had to say regarding the lack of definite and exact knowledge of the content of the national stand of timber. He will also recall how very well Pinchot thought of his (Gannett's) estimates. When one now sets over against such facts the discrepancy between Gannett's figures and those arrived at by the Bureau of Corporations—to say nothing of Schurz's twenty-year prognostication—and considers that the Bureau of Corporations, for all the care of its survey, still considered a much more searching scrutiny necessary, he will begin to wonder whether a little absolutely dependable knowledge might not be worth even a fairly fancy figure.

reference was made in that recommendation of the Lumber Industry Investigation Report already quoted. Legal action in this matter had been instituted by the government, as we have already seen, under the joint resolution of April 30, 1908. That action, consisting of a principal suit against the railroad company, involving some two million three hundred thousand acres valued at about $50,000,000, and forty-six minor suits against the principal purchasers [47] to whom land had been sold in violation of the restricting provisos of the original grant, involving some three hundred and ninety thousand acres valued at about $15,000,000, had got as far by 1912 as the taking of evidence in the main suit, a demurrer in that suit previously having been overruled by the United States District Court in Oregon on April 24 ,1911, with a holding by the court that under the allegations of the government's bill the entire amount of the railroad's then holding would be forfeited.[48]

Upon this the forty-six defendants in the minor suits, proceedings in which had been suspended pending the final decision in the principal action, proposed to the government that their cases be compromised on the basis of decrees of forfeiture to the government with the privilege of repurchase from the government for $2.50 per acre. It was to permit that amicable settlement, and avoid litigation and industrial confusion and uncertainty, possibly productive of more public injury than public good, that Congress, after full hearings before the Public Land Committees of both houses, passed the act of August 20, 1912 (37 Stat. L., 320), amplifying the joint resolution of 1908 to the extent of authorizing the Attorney General to compromise the purchaser suits upon the terms proposed. Such action was taken as speedily as possible, and the greater part of these suits were settled amicably within the next two or three years. They were all settled by 1919.

If for no other reason these last few years of the Service's history would be noteworthy as those in which the Forest Products Laboratory was getting into its stride and organizing its activities with a view to later and continuing usefulness.

[47] Action was only taken against purchasers of over one thousand acres. Smaller sales, down to one hundred and sixty acres, were of course in violation of the granting statute, but in order to avoid the confusion and expense of a great multiplicity of suits the members of the sub-1000 class were not disturbed. Their titles were automatically confirmed by the limitation in Section 3 of the 1912 act.

[48] United States v. Ore. and Cal. R. Co., 186 Fed. Rep. 861.

After the formal opening in 1910 the work of the laboratory centered for a time on a continuation of some of the researches which had been under way at the several small university coöperating laboratories before the opening of the great central plant at Madison. Although the aggregate of tangible result of this pioneer work was small, some of it was of lasting importance. The Yale laboratory, for instance, had definitely established the existence of what is known technically as the "fiber-saturation point,"[49] a bit of knowledge that is basic to all studies in timber mechanics and timber physics.

With the more or less thorough winding up of these inherited loose-ends the work of the laboratory was directed, in the main, into studies in timber mechanics, the preservative treatment of woods, kiln drying, timber physics, paper pulp making, and wood derivatives. By the time the nation entered the World War a gratifying amount of progress had been made in these hitherto slightly explored fields of research, and an amount of dependable data had been accumulated that was destined to be of great value not only during the period of conflict but in the later, and no less important, activities of peace time as well.

Before we entered the War, however, a most important change in general Service organization was effected that was unquestionably of benefit along the lines of investigative work after we were definitely committed to the conflict. This was the merging, on June 1, 1915, of all research activities of the Service in a new branch styled the Branch of Research.[50] Most of these activities had been performed theretofore by the two branches of Products and Silviculture. All the work of these two branches, together with some scattering research activities performed in other units of the Service, were now united under the new establishment. This made the correlation of purely investigational activities complete, and enabled a policy previously formulated—the segregation of investigation from administration—to be put into effect.

From a spectacular standpoint the raising and sending to France of the Tenth Regiment of forest engineers might be considered the supremely important contribution of the Forest Service to American success in the war. Even lumber-jacking and saw mill operat-

[49] The point beyond which wood strength and wood shrinkage are not affected by additional moisture.

[50] Except those having to do with grazing.

ing take on a bit more color when done "in a military manner." Khaki and the Sam Browne dispel a heap of drabnesses. Nevertheless, there was in truth very much more to this operation of putting some twenty thousand American woodsmen at the work of anticipating France's annual cut for twenty years than mere soldier boy glamour. Successful prosecution of the war demanded that this work be done. Raising, training, and directing the force to do it was a real achievement.[51]

But the major portion of the Service's "bit" when measured by the gage of most telling accomplishment was worked out quietly and largely unnoticed in a less romantic field. During the period elapsing between the check at the Marne and the going in of America, it had been borne in upon the world that warfare was no longer a mere affairs of men and muskets, but that it had come to be, in a really preponderating sense, a matter of material resources and their intelligent marshalling and utilization. And among material resources the products of the forest occupied a position of importance. The indispensable uses of wood and its derived products in warfare are multitudinous, both directly and indirectly.[52] It requires no vivid imagination, therefore, to visualize the tremendous field of activity that opened up before the Forest Products Laboratory as soon as the nation was definitely committed to the conflict. The details of that activity cannot be gone into here. It will suffice to say that in aviation, in the making of explosives, and in a dozen and one other lines of war work the assistance of the laboratory on the research side was invaluable. An amazing amount of material which had been accumulated and filed away during the pre-war years was ready for use when hostilities opened. Much more was got together under the insistent spur of war-time neces-

[51] An achievement, however, that must be credited to the Forest Service 50—50 with the lumber industry. There were two regiments of forest engineers, the Tenth and the Twentieth. The commissioned personnel of the first was drawn from the Forest Service; that of the second from the industry. Rivalry between the two was strong for that reason. All told, the Service gave 446 men to the army and navy during the World War. Besides these many others served in the War and Navy departments in civilian capacities or were employed in war industries.

[52] The War required the use, in the United States alone, of over thirteen billion board feet of lumber.—*Military Engineer,* July-August, 1924, pp. 274-77.

sity. All peace-time programs were largely halted in 1917, and in 1918 all investigations not connected with the war were abandoned.[53]

Naturally the doubling and trebling of its ordinary volume of work brought about by the war called for an increase in laboratory personnel and facilities creating at once a problem both of where and wherewithal. Even with an unlimited supply of the latter, personnel of the proper type was difficult to obtain because of the drain of war and more lucrative emolument in other lines. Without it a hopeless impasse was unavoidable. The situation was eased slightly by small transferences of funds and by the detail of qualified personnel from other branches of the Service. These, however, were but petty makeshifts. The work could not have gone forward without the liberal allotment of funds from the several units of the War and Navy departments with which the important coöperative work was being carried on. The matter of additional facilities was met by the generous action of the University of Wisconsin, which, as the need arose for additional space from time to time, vacated and turned over to the laboratory a number of additional buildings. Getting enough of the proper personnel together was a more baffling matter, because, as has already been pointed out, it was terribly scarce, the bulk of the qualified men having either gone into active service with the forces or into various phases of the munitions work elsewhere. Gradually, however, this problem adjusted itself. The force was built up slowly but surely, and by the time the Armistice was signed a total personnel of 458 had been got together.

The greater part of the emergency work was discontinued as soon as possible after the need for it was removed. Some of it, however, has been retained, it having been ascertained that some of the developments made for war purposes have peace-time values as well, sometimes of a high order. Wherever possible, financially and otherwise, war time work of the laboratory which has shown decided possibilities for useful peace time development has not been allowed to lapse entirely. But in the main the work of the laboratory in the years since the Armistice has gone back into the

[53] Work in 1918 both in Washington and Madison was centered in aid of the army, the navy, the Emergency Fleet Corporation, various committees of the Council of National Defense, and the manufacturers of war orders.—Department of Agriculture, Annual Report, 1917, pp. 165-67, See, also, "The U. S. Department of Agriculture in the War," by Dixon Merritt; and "Forest Research and the War," by Earle H. Clapp, in *Journal of Forestry*, XVII, 261 (December, 1918).

pre-war channels. Old contacts have been re-established and certain projects in fundamental research, interrupted by the war, have been resumed.

On July 22 and 23, 1920, there was celebrated at the laboratory the decennial of its career. It is worthy of note that of the committee of arrangements planning this event, and of the nearly three hundred delegates attending it from twenty-two states, Canada, and Porto Rico, a large proportion were practical men of affairs in the wood-producing and wood-using world—significant evidence of the progress of the forestry movement since the days of "denudatic" and the troubles of Carl Schurz. Equally worthy of note, as well as of careful study, is the tangible record of its proceedings the decennial left behind it in the shape of the handsome 196-page volume the committee prepared and published. Part 1 of this work, consisting of eighty-one pages, is devoted to the history of the laboratory, to its activities, past, present and future, to its organization, and to precise information regarding the use of its facilities. To those desiring complete information about every phase of this unique governmental experiment, "The Forest Products Laboratory—A Decennial Record" [54] is indispensable.

To-day, with its staff of trained specialists, its elaborate equipment for every sort of experimentation with wood, and with its more than a decade of useful achievement the laboratory stands out as that development of the American Forestry movement about which one may safely be enthusiastic. It is the concrete embodiment of a great idea that has more than justified itself. It has made good not only by virtue of its notable additions to the sum of pure knowledge but because of its practical work in an eminently practical age. At a conservative estimate American industries are to-day saving fifteen million dollars annually by virtue of the work of the laboratory. And this is only a beginning. This estimate,

[54] Published by the Decennial Committee, Howard F. Weiss, Chairman, 1921. Printed by the Democrat Printing Co., Madison, Wis. A recently issued (late 1922) pamphlet of the Forest Service has brought up to date all the matter in the decennial publication except that dealing with history. In connection with these two volumes one desiring complete information on the status of forest research should examine the Bulletin of the National Research Council for August, 1920 (Vol. 1, Part 4, No. 4), which contains an exhaustive list of the investigative projects in forestry and allied subjects, conducted by national, state and provincial governments, schools of forestry, scientific schools, and private interests in Canada, Newfoundland, and the United States for 1919-1920.

furthermore, does not take into account savings effected by improved methods of forest management. And the operating cost of the laboratory to date has been only slightly in exces of two million dollars for the entire period. Not a few of the men trained in the laboratory have gone into important positions in the wood-using industries. The industrial and economic importance of forest products research from a national standpoint has been recognized abroad. Canada has taken the laboratory for a model in the creation of a similar institution within her own borders; and India, South Africa, and Australia have requested the detail of members of the laboratory staff to set going projects in forest research that will ultimately result, in all probability, in the establishment of laboratories in those distant lands. And besides these definite investigational ventures, contacts involving the giving of advice and information have been established with practically every country in the world.

In bringing this sketch of the laboratory to a close one cannot do better than quote the following admirable exposition of its functions:

> The purpose of the Forest Service in the administration of the Forest Products Laboratory is to conserve American forests by developing the most economical methods of converting standing trees into finished products. The purpose is also to make the growing of timber more profitable by increasing the possibilities in the utilization of both used and unused species. The Laboratory seeks to develop not only new and more efficient processes, but to find ways of utilizing material which would otherwise be wasted, to find new uses for old materials and new materials for old uses. In a word, the aim is to render practical assistance to the manufacturers and users of wood and wood products and at the same time to promote forest conservation and the practice of forestry.

Mention has been made elsewhere of the beginnings of that related phase of forest investigative work represented by the experiment stations. A word will now be said of their later development.

Out of the purely local idea under which the stations originally came into being there gradually evolved a different, and a much broader, point of view. It came to be recognized that work of this sort, to be genuinely useful, would have to be conducted on a regional basis. In the continental United States there are twelve well-defined forest regions, each with conditions peculiar to itself, and problems arising out of those conditions. It also came to be recog-

nized that investigative work of this sort should be for the benefit of all the forests in a particular region, privately as well as publicly owned. As a consequence, it came about that two stations were established on this regional basis in 1922, and the development of the regional idea has gone on steadily since then until to-day, with stations established for eleven of the twelve distinctive forest regions of the country.

These stations, as established to-day, not merely have the broader outlook indicated above, but are approaching their work from a radically different angle than that represented by the original one which hid away in the woods remote from the haunts of men. They are established now at points in their respective regions where they can be close to library and laboratory facilities and in contact with the forest industries and the technical workers to whom their investigations are of prime importance. Effort has also been made in their establishment to pick locations convenient transportationally to all sections of their respective regions. So located, their staffs, consisting of groups of technical men, with the necessary clerical and non-technical assistance, are working on such problems as those presented by the harvesting of old-growth, virgin timber; the procuring of desirable species for reproduction; the re-establishment of the forest by artificial planting; the safeguarding of the forest against fire, insects, and diseases; the stimulation of tree growth; the reconciling of grazing and forest growth; the management of a forest from the standpoint of the wild life inhabiting it; the relationship of forests to erosion, stream flow, and floods; the utilization of forests for recreational purposes; and the securing of that continuous production of timber necessary to permanent conmmunity and industrial development.

In doing this work the big mark the stations are aiming at, is the creation of a scientific basis for American timber growing. The underlying point of view at present actuating this work was well illustrated by one of the leaders in it when he said, recently, that

> The forest is a biologic unit, and hence the forest management and forest protection problems tackled by the forest experiment stations are problems also in botany, in biology, in soils, in meteorology, in engineering, as well as in forestry. Still, the approach and solution of these problems should be, not from the viewpoint of a specialist in these fields who sees his problem only in the light of his specialty, but from the viewpoint of a forester who sees the problem as one of silvicultural management, or timber growing.

To make certain that this viewpoint is ever kept to the fore, the staff of the forest experiment stations must largely always be foresters.[55]

To give the practical aspects of the work of the stations all possible furtherance the custom was begun by the late Secretary of Agriculture Wallace, and continued by Mr. Jardine, of appointing committees known as forest research advisory committees, in the several forest regions, not merely for the maintenance of a cordial relationship between the work and the workaday world, but to prevent, through this practical contact, duplication of work by the stations, and time wastage upon problems of no particular urgency. These committees usually consist of about twenty men representing all the interests possible in the particular region, such as lumbering, pulp and paper, banking, grazing, manufacturing, etc.

The importance of these stations at present, and their possibilities in the future, with relation to a great new industry which economic law and the development of the country are bringing into being, the industry of timber-growing, is so obvious as to make comment necessary. That industry is certain to be of vast importance not only because of the material it will produce, but also because of its use of lands not suited to agriculture, and its relationship to the diversified farming of the future. The stations will help it to grow the greatest amounts of A-1 timber in the shortest time and at the least cost. They are expected—and with abundant reason—to become to this new industry what the agricultural experiment stations have become to farming.

What has just been said about the fluctuations in personnel due to war-time conditions and necessities makes this a proper place to say a word or so concerning problems of a like nature developing out of the economic dislocation of things after the conflict was over.

Even before the Armistice personnel began to be a baffling problem. How to hold men without salary increases in the face of such soaring living costs as those of 1918, and in competition with such inflated wages as those paid in war-time industries was, on the face of it, a difficult matter. Between the Armistice and November, 1919, there were 419 resignations. Of these, it is true

[55] Cf. Address by E. A. Munns, Chief of Office of Forest Experiment Stations of the Forest Service, in Proceedings of the Fortieth Annual Convention, 1926, of the Association of Land-Grant Colleges and Universities, pp. 186-95.

that 118 were part of the abnormally large war force at the Madison laboratory, but 231 were members of the national forest forces, supervisors and deputy supervisors, rangers, and administrative assistants. Of this latter class, 40 per cent resigned in 1920; 30 per cent in 1921. One-third of the ranger force resigned in 1920. The turnover in scientific and technical employees in 1921 was large. In the case of such men, and of executive men—and forest officers largely have to be both—the rigidity of the fixed statutory roll system was blamed for further complicating the problem by making it impossible to recognize differences in efficiency, responsibility, and living costs. Many of his men, the Forester declared, in his 1920 report, were hanging on out of a sheer spirit of loyalty, because of a desire to remain in forest work, and in the faith that fair readjustments would ultimately be made. He pointed out at the same time, however, that no organization could be carried on indefinitely by depending on such qualities in its personnel.

The acute phase of the situation, however, seems to have passed its peak in 1921. Some slight increases granted to a part of the statutory roll, coupled with a betterment in "times" in general, and a gradual clearing up of the chaotic state of industrial affairs existing immediately after the close of the War, brought about a healthier condition; with the result that the Service, in the following year, was able to report that turnover in the ranger force and among the supervisory and technical men had decreased; and that the confusion and inefficiency arising from such abnormal turnover was rapidly disappearing. It was stated at the same time that the salaries the Service was able to offer were no longer so low relatively that properly qualified men would not accept jobs as forest guards, as was usually the case in 1919 and 1920; and that the greater relative attractiveness of Forest Service pay schedules, and the greater emphasis laid by the Forest Service upon character and training in work of this sort had brought about a great improvement. As to common labor for road and trail work, fire fighting, etc., a correspondingly improved situation developed, the Service being able to get better men for lower wages, and get them more easily than it had been able to do in 1919 and 1920.

A further bettering of the personnel situation in all its phases has undoubtedly been effected by the reclassification act of March 4, 1923 (42 Stat. L., 1488), and the prospects would seem to be good

for personnel becoming, within a comparatively brief period, one of the distinctly lesser problems of Forest Service administration.

A decision of the United States Supreme Court, rendered April 23, 1917,[56] finally settled the question of the forfeiture of the Oregon and California land grant, for which the government had been contending since 1908. The main suit against the railroad company, seeking an out-and-out forfeiture of the two million three hundred thousand acres of unsold lands to the government, had been decided by the Federal District Court for Oregon on July 1, 1913, the court declaring the lands forfeited and quieting the title of the United States thereto. This decision was reversed by the United States Supreme Court June 21, 1915, but the court's decision, though technically adverse, was in real effect a victory for the government.[57] It declared against rights of "*bona fide* settlers" and others, preserved the government in its rights respecting lands sold by the company in violation of the original grants, enjoined further violations of the same, and, finally, it forbade any disposition of the lands or timber whatsoever until Congress provided therefor by legislation. This Congress proceeded to do in the act of June 9, 1916 (39 Stat. L., 218), revesting title in the United States to so much of the grant as was unsold on July 1, 1913. Meantime, a second decision of the Federal District Court for Oregon, rendered in obedience to the mandate of the Supreme Court in its decision of June 21, 1915, and in conformity therewith, was appealed from in turn, the parties to the litigation joining in asking the Supreme Court to pass upon the validity of the act of June 9, 1916—which had been passed after the appeal had been originally taken. Thus it was that the decision of April 23, 1917, referred to above, finally settled[58] the matter in decreeing that it was within the power of Congress to revest title to the unsold lands in the United States.

[56] Ore. and Cal. R. Co. v. United States, 243 U. S. 549.

[57] Ore. and Cal. R. Co. v. United States, 238 U. S. 393.

[58] Finally settled, that is, so far as the government's getting back possession of the land is concerned. Litigation looking to a judicial determination of the amounts of money received by the railroad on account of the grant and therefore chargeable against the amount directed to be paid to the railroad in settlement of its equities by the act of June 9, 1916—that act decreed that the railroad should get $2.50 per acre for the entire original grant—was instituted by the government in 1917 and finally determined September 15, 1925. See 8 Fed. (2) 645.

The joint resolution of April 30, 1908, authorizing legal action against the Oregon and California Railroad for the recovery of the lands granted in aid of the construction of that road had also authorized similar action with respect to some ninety-three thousand acres of land in Oregon which had been granted to that state by the act of March 3, 1869 (15 Stat. L., 340), in aid of the construction of the so-called Coos Bay Military Wagon Road. Investigation had showed that this grant, which had in the course of time passed into the possession of the Southern Oregon Company,[59] had been violated as to its original restricting terms in the same manner as had the railroad grant. Action similar to that taken in the case of the railroad was therefore begun, its subsequent course being substantially determined by the development of the major litigation. Thus, before the case had come to a determination in the Federal District Court for Oregon the decision of the United States Supreme Court in the railroad case was rendered. The Federal District Court for Oregon, thereupon entered a decree in the Southern Oregon case.[60] in accordance with that decision, and this decree was affirmed by the Circuit Court of Appeals, February 13, 1917.[61] The company then took a further appeal to the Supreme Court of the United States, but before a determination was reached in that tribunal it made an offer to the government of a settlement of the case on terms to be approved by Congress, the offered terms being a reconveyance of the grant to the United States in consideration of payment to the company therefor at the rate of $2.50 per acre, plus taxes on the tract since 1908. Congress authorized this settlement in the act of February 26, 1919 (40 Stat. L., 1179), and shortly thereafter a deed to the tract was accepted by the Attorney General.[62]

The subsequent history of these tracts is briefly told. Under the terms of the acts by which title thereto was respectively revested in and deeded to the government, provision was made for their subse-

[59] For a complete history of the Southern Oregon grant, see letter of Attorney General Gregory at pp. 2-5 of S. rep. 650, 65 Cong.

[60] United States v. So. Ore. Co., 225 Fed. Rep. 560.

[61] *Idem*, 241 Fed. Rep. 16.

[62] What may possibly develop into a situation somewhat similar to the Oregon and California and the Coos Bay cases is the inquiry set on foot by the joint resolution of June 5, 1924 (43 Stat. L., 461), directing the Secretary of the Interior to withhold his approval of the final adjustment of the Northern Pacific land grants until March 4, 1926, pending an investigation by a congressional committee. An appropriation of $50,000 to cover the

quent disposition as power site, timber, and agricultural lands by the Secretary of the Interior. Into the details of this disposition it is unnecessary to go. Suffice it to say that the timbered areas, even those of no value for agriculture, were not placed *en bloc* in the national forests. Such a solution was not lacking in advocacy, but the sentiment in Oregon was not enthusiastic in that direction.

This disposition of these lands by Congress has been described, not inaptly, as a "backwash of western border opposition" to the conservation policy. Unquestionably Congress, in arriving at the arrangement it did, failed to carry out completely the principles of public forest administration which had been developed during the preceding twenty years. Proponents of those principles contend that in only one respect were those principles recognized—the sale of timber to the highest bidder in quantities adapted to practical operating requirements. They contend also that provision has been made neither for real classification of the land nor for any permanency of forest management. All things considered, however, the settlement was probably the best that could have been made at the time. Practical considerations intervened, as they have at so many points in our forest history. And a point not without significance that is to be borne in mind is the fact that this most sweeping attempt made since the settlement, originated in the "border backwash" country. Senator McNary, of Oregon, on March 5, 1924, introduced a bill[63] providing for the placing of all these lands in national forests. But the bill did not emerge from committee.

The disposition of both tracts as outlined under both acts[64] was further regulated by the act of June 4, 1920 (41 Stat. L., 758). This act also extended to the Coos Bay lands the provisions of the act of May 31, 1918 (40 Stat. L., 593), which had been enacted with respect to the Oregon and California tract only, before the Coos Bay settlement had been effected. The result of this extension was that exchanges of lands in both tracts for private lands adjacent could now be made by the Secretary of the Interior when he

committee's expenses in the second deficiency act for 1924 was continued and made available up to June 30, 1926, by the deficiency appropriation act of March 4, 1925 (44 Stat. L., 1314). A joint resolution of March 3, 1927 (Pub. Res. No. 67, 69 Cong., H. J. Res. 363), amended the joint resolution of June 5, 1924, by changing the date for the final approval of the Secretary of the Interior from March 4, 1926, to June 1, 1928.

[63] 68 Cong., 1 sess., S. 2751, S. 2752.

[64] That is, the revesting act of 1916 and the reconveying act of 1919. 39 Stat. L., 218; 40 Stat. L., 1179.

could by so doing advantageously consolidate government timber lands.]

Despite the fact that these lands were not placed immediately in national forests, some action in that direction has subsequently been taken, the Oregon, Siuslaw, Crater, and Siskiyou forests having been enlarged by additions carved out of the Oregon and California grant by virtue of the acts of October 21, 1918 (40 Stat. L., 1015), February 11, 1920 (41 Stat. L., 405), and September 22, 1922 (42 Stat. L., 1019).[65]

Besides these tracts put in the forests, two other small portions of the lands have been disposed of. A small tract in the Coos Bay lands has been given to Coos County, Oregon, for park and camping sites;[66] and one in the Oregon and California lands to the City of Yamhill, Oregon, for watershed purposes.[67]

The most recent legislation of interest regarding the lands is the act of July 13, 1926 (44 Stat. L., 915), under which the Treasurer of the United States is required to pay to those counties of Oregon and Washington in which the grant to the Oregon and California Railroad lay, sums equal to the taxes that would have accrued in the period 1916-1926, had the lands remained in private possession.

While the question as to the final disposition of the lands was still in litigation, action looking to their protection against fire and spoliation was taken by the government. The sundry civil appropriation act of August 1, 1914 (38 Stat. L., 609), appropriated $25,000 for protecting the railroad grant, the work to be performed by the "Secretary of the Interior with the coöperation of the Secretary of Agriculture, or otherwise, as in his judgment might seem most advisable." Beginning with the urgent deficiency appropriation act of October 6, 1917 (40 Stat. L., 372), provision was made for both tracts under the same direction as provided for in the initial act. Appropriations have been made regularly for this purpose ever since. In 1922, however, the responsibility for the care of the lands was placed directly with the Secretary of Agriculture (Act of May 11, 1922; 42 Stat. L., 507), and there it has since remained. The lands are being patrolled by the Forest Service where their adjacency to national forests renders

[65] These additions were made in aid of the better protection of the watersheds of certain Oregon cities. 66 Cong., H. rep. 425.

[66] Act of May 5, 1926 (44 Stat. L., 397).

[67] Act of June 15, 1926 (44 Stat. L., 745).

this practicable. Where they are not conveniently contiguous to national forests they are protected by private forest fire protective associations under agreements entered into with the Forest Service. As a matter of fact the actual work of protecting these lands has been so done from the beginning, the appropriations being regularly transferred to the Forest Service for appropriate utilization at the request of the Interior Department. The change made in 1922 was at the suggestion of the Secretary of the Interior, who argued, very logically, that since the Forest Service possessed the existing equipment for the work and actually performed it, a continuation of appropriation juggling was unnecessary.[68]

The relationship, both real and fancied, between the forest and water has already been touched upon at many points. The phases in the basic forest statutes of 1891 and 1897 regarding "favorable conditions of waterflow," and those in the Weeks law of 1911 regarding stream-flow regulation for the enhancement of navigability, are only a few of the more prominent of those points. Water, in one form or another, has been part and parcel of the forest story from the farm journal forestry harangues of the fifties, down through the days of the "scant of water" bills in Congress in the seventies, to those of the rain-producing "professors" of the nineties, who were, for a brief space, wished upon the reluctant Fernow.

We now turn to another phase of the forest-water connection that was of major prominence around 1910; that had much to do, indeed, with the most noteworthy outburst of that period of alarums and excursions. This was the matter of the energy produced by the weight of water falling from a higher point to a lower one, conditions for the creation of which were of course exceedingly favorable in great areas of the Western forests; the said areas possessing both great quantities of water and great differences in mean elevation. At just about the beginning of the period of the Service's history under present discussion it was estimated that considerably more than half the water-power capable of development in the United States was in the Far West, within, for the most part, the boundaries of the national forests. And the major portion of that which was not in the forests was said to be protected by them. In the heyday of the conservational "occasion to

[68] Secretary of the Interior, Annual Report, 1915, p. 235: House Hearings on Agricultural appropriation bill for 1923, pp. 268-71.

be profited by," therefore, there was bound to be an uproar over water-power. It is not at all improbable that the cause of total abstinence was helped very materially in the years about 1910 by the nightmare of a " water-power trust."

Now this is not to argue that there did not exist in those years gentlemen who dreamed dreams of all the water-power under heaven " hooked up " into one system, controlled by one lever, with themselves holding that lever with one hand and with the other taking in from a helpless and power-avid world all the money that world possessed, at rates defying the law of supply and demand and every other dictum in the statute book of Economics. Nor is it to argue that the potential power sites on the national forests and the public domain were never at any time lusted after by such gentlemen as objectives in such a vast scheme of acquisition. But it is at least doubtful if the menace ever possessed the gargantuan bulk and the pterodactylian aspect with which the " profiters by occasions " so liberally and so vividly endowed it.

As has been pointed out already in relation to the disproportionate outcry raised regarding conservation in general, the very extravagance that characterized much of the propaganda concerning water-power was, for its canny and calculating insincerity, productive of a long-run good result. Despite the screaming stridency of it, there did flow from the resultant agitation an undoubted general comprehension of the water-power situation by the country at large which would scarcely have developed without it. A nation imbued with that tradition of " why bother," which had grown out of the Great Legend of Inexhaustibility, a nation scarcely aware for the most part of even the existence of such a thing as potential hydro-electric power on a colossal scale, was extensively and intensively awakened and informed. As a result thereof the national power sites were conserved and their subsequent development secured from any danger of monopoly. In that protection the Forest Service has played a by no means unimportant part. How it has been enabled to do so will be made apparent by a consideration of the matter from the standpoint of statutory development.

The act of May 14, 1896 (29 Stat. L., 120), was the earliest statute providing for water-power development on government land. It authorized the Secretary of the Interior to permit the use of public lands for generating and distributing electric power, and

to establish regulations governing such use. It authorized permission only; not the granting of easements, rights, or interests.

An act passed two years later, on May 11, 1898 (30 Stat. L., 404), provided that rights of way over public lands for irrigation could be used, also, for water-power development subsidary to the irrigation use. This was followed by the act of February 15, 1901 (31 Stat. L., 700), which authorized the granting of permits only, like the 1896 law, such permits to be revocable by the Secretary of the Interior or his successors at discretion.[69]

The act of February 1, 1905 (33 Stat. L., 628), which transferred jurisdiction over the national forests—or reserves as they were then called—from the Interior Department to the Agricultural Department had the effect of putting the administration of the 1901 act, so far as it applied to the forests, in the hands of the Secretary of Agriculture;[70] which naturally meant, for all practical purposes, the hands of the Chief of the then Bureau of Forestry. A clause in this same act granted rights of way over forest reserves for municipal, mining, and ore milling and reduction purposes.

With the exception of a special act passed May 1, 1906 (34 Stat. L., 163), granting specific special privileges of public land use and occupancy to an electric company in California for a definite period, for such compensation as the Secretary of Agriculture might think proper to charge,[71] the acts enumerated constitute the entire body of law governing the acquisition of water-power rights on public lands down to 1910.[72] As has already been pointed out

[69] Regulations under this law were promulgated by the Secretary of the Interior on July 8, 1901, prescribing manner of preparing and filing applications for permits, and procedure thereafter necessary to the obtaining of the Secretary's approval. No formal permits were issued, the Secretary merely putting an appropriate endorsement on a map of the project submitted to him.

[70] By virtue of an agreement between the Secretaries of the two Departments. See 33 L. D. 609.

[71] Another special act was passed for Californian benefit some six years later. This was the act of December 19, 1913 (38 Stat. L., 242), commonly referred to as the "Hetch-Hetchy act," granting San Francisco the right to use portions of the Yosemite National Park and the Stanislaus National Forest for water impounding and hydro-electrical development for municipal purposes.

[72] It should be noted here that an act of the following year—Act of March 4, 1911 (36 Stat. L., 1244)—empowered the Secretary of Agriculture to grant easements for transmission lines across the forests.

nothing could be acquired under these laws but a mere permit, revocable at pleasure, caprice, or discretion. But inasmuch as it was conceivable that valuable water-power sites might be obtained under various of the public land laws, Congress was constrained, when the excitement and outcry was at its height, to throw about them protecting legislation in the shape of the act of June 25, 1910 (36 Stat. L., 847). This law authorized the President to withdraw from settlement, location, sale, or entry any public lands, or national forest lands, valuable for water-power development. Under this act extensive withdrawals were made by President Taft. Only under the mining laws could such withdrawn lands be obtained. In the case of the national forest lands, but little added protection was afforded, inasmuch as those lands were already reserved from appropriation under any laws save the mining laws, the agricultural homestead act of 1906, and the right-of-way acts above referred to.

To sew the thing up completely, moreover, action had been taken sometime about the year 1907 looking to the safeguarding of forest power sites. If the reader will thumb over the reports of the Forester for the years 1907-1909, he will note certain brief and entirely unelucidated references to the reserving, upon the forests, by the Service, of what are described in those reports as "administrative sites." The bold fact is stated; nothing more. He will also note that the number of these intra-Service settings-aside was an exceedingly large one, up in the thousands, in fact. He may wonder what the Service could possibly have wanted with such a number of such sites. It already had established its personnel on the forests, and presumably it had about all the locations for ranger stations and such—in other words, sites for purposes of administration—that it could conveniently use.

The effect of this policy upon Forest Service morale can be conjectured.

Here was a force of men that had been doing its best to clean up the forest homestead and mining claim situation, and to establish grazing rights fairly, squarely, and honestly. It is doubtful if in all history there has been a force of men more sincerely devoted and enthusiastic than was the old guard of the Forest Service. Cromwell's Ironsides scarcely exceeded them in this respect. Theirs was a sacred cause to which they were giving themselves unreservedly. But can any force of men with an idealism that is general rather

than particular, and whose conception of the phrase "square deal" envisages squareness at all times and under all circumstances, be other than confused when it is ordered to "pussyfoot"? Can any such force after insisting in season and out of season upon exact honesty on the part of the stockmen and land claimants it deals with adopt a contrary course on its side of the game without a qualm or two? Can it condemn fraud in the other fellow and at the same time perpetrate if not fraud certainly sharp practice in its dealings with him and still keep a good taste in its mouth? The writer doubts it. But these are questions for the reader to answer for himself.

After the taking over by the Forest Service of the administration of the 1901 law as it applied to the forest reserves, various forms of permits and sets of regulations were worked out and put in force. The earliest form of permit used was similar to one already in use for the granting of other forms of forest occupancy—grazing, roads, summer camping, etc. The charging of a fee was also early determined upon, in line with the already established practice as regarded grazing and other privileges on the national forests, and in conformity with an opinion rendered by the Department of Justice.[73] Beginning in 1909 a study of water-power development on the national forests was made by a specially employed hydro-electrical engineer. Discussions with representatives of power companies and of the engineering profession took place. On the basis of the data obtained in this way as well as from the practical experience of the administrative officers of the Forest Service, a set of revised regulations was drawn up and promulgated by the Secretary of Agriculture in December, 1910, after approval by the Forester and the Solicitor of the Department. Under these regulations all permits were to be granted by the Secretary of Agriculture save those for very small noncommercial installations capable of only a limited amount of power development. Permits of this sort might be granted by the district foresters. The permits granted by the Secretary ran for fifty years and carried a preference privilege of renewal at the end of that period. But they were revocable at any time at the pleasure of the Secretary, they were not transferable, and they really granted no privilege but an occupancy and use of forest land which might be terminated at any moment and without

[73] 25 Op. Att. Gen. 470; 26 *ibid.* 421.

warning. The point of view of the investment world with regard to these permits was expressed as follows:

What is the nature of this permit and what rights does the company really acquire under it? It obtains a right which is revocable at will, unassignable, therefore unmortgageable, subject to interference from mining claims, and which becomes void whenever any change is made in the status of the lands, either by transfer from the jurisdiction of one department to another or by the granting of the right of entry. This is certainly a very flimsy peg on which to hang an investment of several million dollars. Permits may be worded to indicate good intention, to ring with encouragement, and to appear safe and reasonable, but under the law a permit as described above is all that the company can get.[74]

The defects in the then-existing situation were generally recognized and legislature efforts looking to their cure were not lacking. Numerous bills were introduced in Congress from 1908[75] onward, aiming, for the most part, at the encompassment of two principal objects: first, such a security of investment as would not interfere with the free, legitimate functioning of capital and enterprise; second, such a protection of the interests of the public as would ensure fair rental returns for granted privileges, prevention of speculative holding of granted sites, complete and beneficial development of the same, reasonable rates, and efficient service. A joint committee to study the problem from the points of view of both departments and to suggest lesislation was appointed in January, 1911, by the Secretaries of Agriculture and the Interior. It reported later in the same month recommending, among other things, the granting of absolute leases for a fixed period, irrevocable save for breach of conditions, or breach of regulations to be devised for the safeguarding of the public interest.[76] Legislation embodying these

[74] 62 Cong., S. doc. 274, p. 95.

[75] For an excellent description of these bills in the Sixtieth, Sixty-first, and Sixty-second Congresses, as well as for an account of the rise and development of the entire hydro-electric question with particular reference to the national forest areas, see Society of American Foresters, Proceedings, VIII, pp. 1-52.

[76] The report in full is published at p. 243 of S. doc. 274, 62 Cong. This document, which covers the hearings held in November, 1911, before the National Waterways Commission on the development and control of water-power, is full of interesting information concerning the entire history of water-power development up to that time.

features continued to be recommended in their annual reports by the Forester and the Secretary of Agriculture. Legislative interest in the subject likewise continued. A report was prepared by the Forest Service on the ownership and control of water-power sites, along lines tending to show the existence or non-existence of a monopoly, in response to a Senate Resolution of February 13, 1915.[77] Legislation calling for the control of water-power matters by a special commission was strongly urged by the Secretary in 1917 and 1918,[78] was drafted after long inquiry, passed the House in the latter year, but got no farther.[79] A new "Waterways Commission" was created however in 1917.[80] The old one had expired automatically in 1911.

A decision of the United States Supreme Court on March 9, 1917,[81] removed the last obstacle of uncertainty that lay in the way of an ordered federal water-power administration. A power company in Utah elected to contest the government's claim to control. It used forest lands for power purposes without permission, contending that statutory as well as constitutional authority for federal control was lacking. The decision disposed of these contentions; and established that the 1901 law was the sole statutory authorization for commercial power development on national forest land, and that such land could be held for such purpose only under permits, revocable at will, issued by the Secretary of Agriculture in accordance with its provisions.

This decision had the effect of clearing the air—or, perhaps more appropriately, the water. It was determinative at once, of course, of a number of cases in the West that had been predicated upon similar premises; and it established very clearly the necessity for legislation that would assure to capital and enterprise sufficient measure of certainty of tenure to make attempts at power-development reasonably figurable propositions rather than gambles on future governmental points of view.

[77] See S. doc. 316, 64 Cong.

[78] Department of Agriculture, Annual Report, 1917, pp. 37, 42.

[79] 65 Cong., H. rep. 715.

[80] Act August 8, 1917 (40 Stat. L., 269). Cf. act of June 10, 1920 (41 Stat. L., 1063).

[81] United States v. Utah Light and Power Co., 243 U. S. 389.

Out of this clarification plus the understanding accumulated during the years of "profiting by the occasion" there finally flowed the act of June 10, 1920 (41 Stat. L., 1063), establishing the Federal Power Commission. 1920, therefore, was the last year the Forest Service was in full control of power development within its especial administrative sphere. It received as revenue in that year from power permits under the old laws and regulations a little more than $88,000.

The shifting of responsibility brought about by the water-power act, however, did not mean that the Service was relieved of all water-power detail; rather the reverse. Under the law the bulk of the engineering and technical work must still be performed by the existing appropriate organizations of the three departments whose heads comprise the Commission,[82] the new source of the granting of privileges. The practical result of this has been more water-power work than ever for the Forest Service. The new system, by eliminating uncertainty, has unshackled enterprise. But the work of passing upon applications for power privileges on the forests, and of inspecting and supervising the operations of permittees and licensees, naturally greater under the new system than it was under the old, is still performed by the same organization that handled it under the old law of 1901. During the seven years ending June 30, 1927, the Commission received 422 applications for projects in whole or part on national forest land. It referred to the Forest Service for engineering and administrative report in the fiscal year 1926, fifty-six applications. In 1927, forty-six applications were so referred. Thirty-seven preliminary permits and licenses issued under the water-power act were referred to the Service for field supervision in 1926; fifty-one in 1927.

In addition to this work under the new law the Service is still administering permits and transmission-line easements granted under the 1901 and 1911 acts, respectively. It was expected that the passage of the 1920 act would cause a general transference thereunder of the old law permittees. This has not occurred to the extent predicted, however, and the Service is administering to-day, under the old laws, a very substantial proportion of the development it had under supervision in 1920. For that reason revenue from

[82] War, Agriculture, and Interior.

power rentals has not yet completely disappeared in the annual receipts of the Service It is believed, moreover, that considerable time will elapse before power development in the forests under the 1901 law becomes non-existent; if, indeed, such a state of affairs ever comes to pass. The passage of the water-power act and the consequent straightening-out of the general power tangle, it would seem, has removed considerable of the objection to the old act; simply because by the mere fact of the new law's coming into existence a great deal of the "uncertainty" which made enterprise fearful of the old act has been blown away. The old act can still give nothing but a permit revocable at pleasure, but with the definite standard of certainty set up for all to see by the new act there is much less fear of the power to revoke being arbitrarily and capriciously exercised under the old. It is thought that this feeling of increased confidence plus the knowledge that regulation under the old system is a bit simpler than under the new, will prevent, for at least a fairly substantial period, the definite passing into limbo of the law of 1901.

The Weeks Act has now been in existence for something more than a decade. During that time four amendments[83] have been placed upon it, the most important of which, the Clarke-McNary Act of June 7, 1924 (43 Stat. L., 653), will be accorded full discussion later on. In addition legislation has been enacted making provision for game protection and mineral development in the forests created under its provisions.[84] Down to June 30, 1927, there had been acquired under its provisions, and under those provisions as enlarged in scope by the just-mentioned Clarke-McNary amendment, a total area of 2,892,701 acres, of which 2,564,619 acres have been definitely placed in government ownership, and the final purchase of the balance approved by the National Forest Reservation Commission.

The matter of fire has come to be increasingly recognized in the development of forestal knowledge for what it unquestionably is—the problem of problems in America's working toward a perfect forest order.[85] Conservative foresters to-day declare that an approxi-

[83] Acts: March 4, 1913 (37 Stat. L., 855); June 30, 1914 (39 Stat. L., 456); June 7, 1924 (43 Stat. L., 653); March 3, 1925 (43 Stat. L., 1215).

[84] Act of August 11, 1916 (39 Stat. L., 456).

[85] Forest Service statistics on fire wastage collected over a period of years indicate that on the average some forty thousand fires occur, annually burning over some nine million acres and destroying about $17,500,000 worth of timber. These figures are for the entire forested area of the country; not

mation of perfect fire protection would mean that our forest problem was 75 per cent solved. Some put a higher figure on it. Perfect fire protection cannot, of course, be had so long as there are any forest areas unprotected anywhere in the country. The existence of such unprotected areas is naturally liable to make possible the beginning of a conflagration that will reach a protected area with such a flying start as to render futile the efforts of the protecting force. Fire pays no regard to state lines or no-trespass signs at forest boundaries.

Taking the forests of the country as a whole, therefore, national, state, and private, the degree of protective organization to which we have attained to-day, great improvement though it is over the old "Inexhaustible" days when the people let the fires burn and thought no more about it, is still far from adequate. And this largely because of the "spotty" condition of protection just hinted at. Some areas are protected, some are not. The national forests, the state-owned forests, and perhaps the bulk of the more valuable privately owned ones receive varying degrees of protection that average up fairly well. But the fact that six[86] states of the thirty-nine containing important forest areas have no system or organizations for suppressing forest fires within their borders, and the further fact that the timberlands on the public domain received no protection against fire worthy of the name until 1926, is sufficient indication that our present condition can stand remedying.[87] Very recent legislation,

for the national forests alone. The causes of these general fires were: Incendiarism, 17 per cent; campers and smokers, sixteen; brush burning and railroads, fourteen each; lightning, eight; lumbering, six; miscellaneous, seven; and unknown, eight.

[86] The prospects are good for the reduction of this figure to four, and possibly two, by 1928.

[87] The timbered lands on the unreserved public domain—that is to say, on land belonging to the nation which is not included in national forests, national parks, Indian or other reservations—comprise about five million five hundred thousand acres, exclusive of the forests in the interior of Alaska, which are of vast extent. Of this area, the two million acres of revested railroad lands in Oregon receive protection, as before related. The rest did not until July 1, 1926, when the Interior Department appropriation act of May 10 of that year (44 Stat. L., 453, 457) carried an item of $25,000 for "prevention and fighting of forest and other fires on public lands." A like sum was appropriated for the same purpose for the following fiscal year, 1928. See House Hearings on Agricultural appropriation bill, 1925, p. 318. Under this appropriation the actual protective work is taken care of by the state forestry departments of the states in which the public lands lie and the Interior

happily, holds out much promise that the end of this state of insecurity is in sight. But of that later.

The development of forest protection against fire is a very fair brief summary, indeed, of our general development in forestry knowledge under the prodding of "experience and necessity." That summary stands forth clearly in the fire legislation that has been written since 1897, the year, it will be recalled, in which we had attained sufficient knowledge to take thought of the protection of the forests we had "reserved" in 1891.

The sundry civil appropriation act of June 4, 1897 (30 Stat. L., 11, 34, 35, 36), decreed that the Secretary of the Interior should make provision "against destruction by fire." Sundry civil acts in the following years up to 1905 provided for "foresters and other emergency help in the prevention and extinguishment of forest fires." Since 1905, the fire appropriations [88] have been made in the annual agricultural appropriation acts under general expenses. Their gradual extension in scope is interesting. Thus, in 1905, the coöperation of the then Forestry Bureau in the enforcement of state fire laws was directed. In 1908 provision was made for the use, in a fire emergency, of any Forest Service funds in its suppression. Fire, too, was a most compelling consideration in the adoption, that same year, of the "permanent improvements" policy, under which

---

Department merely foots the bills. It has not as yet organized a protective force of its own. As this is being written a report prepared by a committee consisting of the chiefs of the several bureaus having jurisdiction over government-owned forest areas—Forest Service, National Park Service, Indian Office, and General Land Office—and the Chief of the Weather Bureau, which forecasts fire weather, is in the hands of the Chief of the Bureau of the Budget. It looks to better coördination of protective effort and more thorough protection. The two appropriations above noted were authorized by the act of September 20, 1922 (42 Stat. L., 857), giving, besides authorization for the making of appropriations for the purpose, general authorization to the Secretary of the Interior to protect timber on all lands owned by the United States under the jurisdiction of the Department of the Interior from fire, disease, or insects, either directly, or in coöperation with other government departments, states, or private owners.

[88] Covering, it must be understood, the national forests only, and having nothing to do with fire suppression in timber on the unreserved public domain. With the passing of jurisdiction over the reserved forests in 1905 from the Department of the Interior to the Department of Agriculture, all forest fire suppression work of a regularly organized nature by the former department ceased.

was inaugurated the creation and maintaining of such things as "fires lanes" for the "protection" of the forests. A little later the beginning of emergency and deficiency appropriating for fire fighting is to be noted, the varying amounts furnishing eloquent testimony of the occurrence of "good" fire years, or of "bad" ones, such as the terrible season of 1910, when the whole Northwest was ablaze and seventy-eight fire-fighters lost their lives.[89] In 1915 the interchangeable availability of the various sums appropriated for permanent improvements was authorized, thus affording an added degree of flexibility for fire protection in unforeseen emergencies. Authorization of the payment of rewards for the arrest of forest fire setters came in 1919, a terse reminder of the activities, or threatened activities, of certain elements in the Northwest during the war; the same elements that were back of the Seattle "revolution" of that same year. Another war-time echo came in the following year with the inauguration of coöperation with the War Department for airplane forest patrol in the fire season.

As is usually the case with calamities, the abnormally disastrous fire season of 1910 was in the long run productive of a little good; in that the somewhat allopathic dose of "experience and necessity" which it forced upon the country brought about a very impressive realization of the terrific possibilities of the fire menace. Beyond question this realization was not devoid of influence in bringing about the passage of the Weeks Act in the following year. It also stimulated very greatly a spirit of coöperation among the owners of forest property in the heavily timbered regions, especially in the Northwest, where the states of Oregon and Washington, containing as they do the preponderating bulk of the country's remaining virgin stumpage, have been styled, not inaptly, "the nation's wood lot." Agreements for joint protective work began to be entered into in this region between the Forest Service and the great timber-owning railroads. Similar agreements were made with such organizations as the Oregon Forest Fire Association and the Washington Forest Fire Association, composed of private timber owners controlling most of the heavily timbered slopes west of the Cascades; as well as with like associations in the white pine belt of Northern Idaho, and in the pine and redwood regions of California.

[89] The material damage done was also very great. Losses in the national forests alone exceeded $25,000,000, fifty times more than normal.

The Forest Service took advantage of this heightened public interest in another way, by putting forth every effort to bring to the public attention the importance of preventing fires starting. It was very actively back of the first observance of Fire Prevention Week in May, 1920, a national reminder that has since been repeated yearly with, there is reason to believe, no little benefit as a result thereof.[90] The worthwhileness of this work and the volume which it speedily and necessarily developed made it advisable to give it a permanent organization of its own. Thus the new Branch of Public Relations came into existence May 20, 1920, "to provide for better coördinated and supervised activities along this line and for more careful planning of methods by which public interest may be increased in both the protection and use of the forests."[91]

Early in the following year a most unique disaster put the protective resources of the Service to an abnormally severe test. In some manner a typical Mississippi Valley cyclone fell upon the western part of the State of Washington, making in a few moments some terrific meteorological history for that normally mild and salubrious region. There was no loss of life, largely due, no doubt,

[90] Similar comment applies to "Forest Protection Week" instituted by Presidential proclamation in 1921. This week in the following year was set for the period April 16-22, in order to coincide with the golden anniversary of Arbor Day. Besides being the semi-centennial of Arbor Day, 1922 was also the semi-centennial of the establishment of Harvard's Arnold Arboretum and the fortieth aniniversary of the foundation of the American Forestry Association at Cincinnati. It was also the one hundredth anniversary of the birth of Dr. F. B. Hough. In 1922 also occurred the death of Dr. Joseph T. Rothrock, one of the first forestry advocates in America. In order that the idea of Forest Protection Week should be spread as widely and as thickly as possible the governors of the several states were asked to transmit it to the public through the school systems, civic organizations, and the press. Observance was general in forested regions. The name was changed to American Forest Week by Presidential proclamation in 1925.

[91] Department of Agriculture, Annual Report, 1920, p. 229. Two years later the Forester felt constrained to declare of his new unit that "It is not engaged in propaganda to build up support for the Forest Service as an organization or for specific policies or measures concerning the advisability of which there may be question, but it exists for the diffusion of knowledge without which enlightened action is impossible."—Forester, Annual Report, 1922, p. 55. More recently, 1926, the Forester has declared that the new branch was a logical development of a policy originated by Mr. Pinchot for public information and education—a recognition that the educational work of the Forest Service stood on all fours in general importance with its administrative and research functions.

to the fact that the storm's path lay through the remote and unsettled Olympic Peninsula; but six billion feet of giant Douglas fir timber was scattered in a twisted mass over two hundred and fifty square miles of territory rough and difficult of access at best. More, the wrecked forest lay in the very heart of about one hundred billion feet of what is perhaps the densest stand of big and valuable virgin timber existing in the world to-day. The fact that very little of the storm damage was done in the near-by Olympic National Forest of course availed nothing. A fire trap of gigantic proportions had been created and it was seen that if it were once to get fairly ablaze, national and private forests alike would inevitably go up in a fire of unexampled magnitude.

Fortunately the storm damage was done before the opening of the dry season, so some time was afforded for protective organization. The Forest Service, the State of Washington, and the private owners coöperated in the most elaborate and intensive protection ever attempted in the United States, if not in the world. The entire local public was organized to eliminate all human causes of fire. In addition to large private contributions the Washington legislature appropriated $100,000 and put practically dictatorial powers in the hands of the governor with regard to the hazardous territory. Roads and trails were made through the wreckage and were heavily patrolled. Motor trucks carrying gasoline pumps were provided. All this has been expensive but, considering that the alternative is disaster on an immense scale, it has been well justified. A few fires have started in the wrecked area, but they have been suppressed before they could get away. The big part of the hazard now seems to be over, due to the opening up of the area with trails, the growth of new vegetation, and the rotting and moistening of the down timber.[92] The intensive methods, however, will have to be continued for some years to come.

Altogether, it can be said that by the beginning of 1927 a very great advance had been made from the situation which had pre-

[92] Unfortunately, the salvaging of anything more than a negligible amount of this blown down timber seems to be out of the question. Some few small sales have been made, both in the small area destroyed in the Olympic National Forest and in the large areas in private ownership. But the region is so very inaccessible that salvaging on any scale is impossible. The entire region, as a matter of fact, constitutes a reserve stock that will not be economically available for some years to come.

vailed prior to 1911. All credit for that improvement is not by any means due the Forest Service. "Experience and necessity" were grinding away, slowly but exceeding fine, educating local public opinion away from old beliefs, some of which even used to encourage and applaud the setting of forest fires; and shepherding private owners together into protective associations such as the ones that have just been referred to. In 1909, for example, a superdevelopment of this sort had its inception in the all-important national wood lot of the Pacific Northwest, when the beginning was made of the great organization which has come to be known as the Western Forestry and Conservation Association, with headquarters at Portland, Oregon. This federation of local protective associations of private owners acts as a clearing house for fire-fighting and forestry methods for its member associations throughout Montana, Idaho, Washington, Oregon, and California, performs the necessary publicity work for them, and, by furthering the formation of additional local associations, enlarges the area of adequate protected private forest. Starting, in 1909, with the patrols associations of Idaho and Washington as a nucleus, it gradually carried the coöperative idea to the other three states and has now come to be the second largest forestry organization in the country, having a total contributing acreage of thirty million, and protecting in all about forty million acres. Under the direction of a professional forester of long experience and high standing [93] in the Forest Service, who was placed in charge of its activities in 1909,[94] it has not only greatly strengthened the protection given the timber and cut-over holdings of its members, but it has immensely simplified cooperation between private owners, the states, and the Forest Service throughout its territory. It has also helped the cause along by stimulating improvements in state forest legislation. For example, not only do the three states of Oregon, Washington, and Idaho cooperate with the Forest Service under the Weeks and Clarke-McNary laws [95] in a most thorough manner, but they also posses

[93] Department of Agriculture, Annual Report, 1911, p. 347. House Agricultural Committee Hearings on H. R. 15327, 66 Cong. 3 sess., p. 22.

[94] Another professional forester and former Forest Service man came to the Association in 1919 when the Oregon Forest Fire Association, of which he had been director, merged with the interstate association without losing its identity.

[95] California and Montana do this also.

the most advanced laws governing private protection in the country. Oregon in 1913, Washington in 1921, and Idaho in 1925,[96] enacted laws under which private timber owners must provide adequate fire protection for their holdings or have it provided for them at their expense by the state.[97] Coöperation now throughout the Northwest between the nation, the states, and private owners is far more complete than in any other part of the country. Its resultant pooling of men and means is sometimes referred to as "the triple alliance." All three parties to the arrangement contribute financially,[98] but the bulk of the financing comes from the private owners. The respective states see to it that the police power is properly and effectively applied. All three agencies usually agree on general policies.[99] Areas to be protected are divided up or pooled, depending upon circumstances. For example, a tract of private timber surrounded by national forest, or so situated that existing national protective forces can best look after it, is patrolled by federal rangers; while, on the other hand, private patrols protect government timber in locations which can be more conveniently and economically safeguarded than through government agency.

But though, as has just been said, it has been the operation of "experience and necessity," in other words economic law, that has

[96] Laws of Oregon, 1913, c. 247; 1921, c. 50; Washington Session Laws, 1923, c. 184; Remington's Washington Statutes, 1922, sec. 5805; Idaho Session Laws, 1925, c. 150.

[97] The Idaho law is the most advanced state law dealing with forest protection at the present time. It goes materially beyond the Oregon and Washington legislation in the requirements placed upon private timberland owners in the matter of fire control and slash disposal. Since Oregon showed the way in 1913, the principle of compulsory patrol has been adopted by at least a half-dozen other states. All the five northwestern states covered by the Association now require it. Montana, the last state of the five to adopt it, did so only recently by virtue of Chapter 95, Laws of 1927, which became law on March 9, of that year. This act does not specifically command the patrol system, but does so substantially by virtue of other requirements that cannot very well be met in any other way.

[98] The private owners in the Association put up $500,000 in 1921 to about $175,000 by the states and the nation. The protection in 1924 was $1,260,000 to $355,000. The proportion contributed by the nation, it should be borne in mind, is in addition to what it spends directly for the protection of the national forests.

[99] Technically, the nation, through the Forest Service "passes on" them, or it would not coöperate. but it is the lesser of the three agencies in framing them.

been the prime impellant in the improvement brought about in the fire protective situation, rather than the Forest Service itself, it must not be understood that the Forest Service has played anything like a small part in the achievement of the desirable general result. Economic law simply created a situation calling for a certain instrument for the putting through of a certain good. The instrument demanded was a power sufficiently centralized and at the same time sufficiently pervasive to bring about a genuine form of national leadership. The good aimed at was such a national coördination of effort in attacking the problem of forest wastage as only such leadership could bring about. Now had the instrument been lacking or, existing, had it not known what to do when the occasion for action arose, much more, and possibly very painful, grinding of "experience and necessity" would have had to be gone through with.

The results to date have been a great widening and strengthening of effort in fire protection, a building up from nothing to a point where about half the privately owned forests of the country are receiving some form of protection, involving an expenditure for this purpose on the part of states and private owners of more than seven times the federal appropriations for this purpose. It will thus be seen that though much remains to be done, there has been an impressive diminishment of the unprotected areas of a decade and a half ago, when the national forests were the only ones receiving systematic protection.

The fire protection bill on the national forests amounts, in an average year, to about $700,000. Most of this amount is provided by means of deficiency appropriations, the direct appropriations having averaged of late years about $250,000. It has been argued that larger direct appropriations would ensure a cutting down of the total yearly bill by making possible a larger patrol force with a consequent smaller margin of time between fire discovery and the beginning of extinguishment. To date, however, Congress has preferred to operate by the deficiency method.[1] The Forest Service

[1] Deficiency appropriations since 1910 have been as follows: 1911, $900,000; 1912, $1,000,000; 1913, $200,000; 1914, $200,000; 1915, $449,000; 1916, $57,300; 1917, nothing; 1918, $775,000; 1919, $665,000 (from Presidential fund for national security and defense); 1920, $2,950,000; 1921, $775,000; 1922, $341,000; 1923, $375,000; 1924, $180,000; 1925, $1,335,000; 1926, $800,000; 1927, $2,155,000. The appropriation for 1925, 1926, and 1927 included protection for the revested lands in Oregon.

estimates that a spread of the protecting force on an average of one man to ten thousand acres would normally afford perfect protection and would make possible such a prompt getting-at every blaze as to prevent any of them from getting away. The present spread is a man per fifty thousand acres, and under this ratio it seems to be impossible to reach about 25 per cent of the fires before they have got such headway that their suppression without considerable loss is impossible.

The 1924 and 1926 fire seasons were severe ones, the worst in fact the Service has had to contend with since 1919. In 1924 a total of 8247 fires was recorded, which burned over an area of 602,044 acres of national forest land, causing a property damage of $1,532,100 and costing—exclusive of the time of forest officers—$1,582,792 to suppress. In 1926 the corresponding figures were 7095 fires, 776,570 acres, $4,563,081 property loss, and $2,167,732 suppression cost. In each year, in other words, something more than one-third of 1 per cent of the total acreage of the national forests was burned over. In each year, too, something more than double the acreage was burned that was burned in 1923, which was an exceptionally favorable year. In 1917 about twice as great an acreage was burned, and in 1919 four times as great.

Most of the damage done in 1924 was in California, where the season was the worst in the state's history. The fire situation in other parts of the country was about normal. In California alone three hundred and thirty-seven thousand acres were burned over. While the losses of merchantable timber there were comparatively small, a great deal of young, oncoming growth was destroyed.

That season in California was an unusually dry one, it is said, there being practically no rainfall from early April till late August. This made for very great inflammability in the forest and brush areas, which are said to have been practically constantly on fire for four months. Frequently there were fires which burned over a thousand acres in a single day.

Despite the adverse conditions that had to be faced, however, it was felt that something was wrong somewhere else. In fact in certain respects it was known that something was wrong. A great part of the trouble in California in 1924 was in the four national forests in the extreme southern part of the state. These forests are largely vast areas of brush or chapparal rather than forests in

the ordinarily understood sense, and are more valuable for watershed protection than for timber. In a very dry season they are exceedingly inflammable. The Forest Service has long recognized this extremely hazardous condition, and had been advocating for several years an intensive system of fire breaks to control the outbreak when it should come. The lack of these strategic lines was keenly felt when it finally did come in 1924.

In the northern part of the state where genuine forestal conditions prevail, the season was likewise a disastrous one. The weather conditions were just right for the fire, the fire came, and the protecting force had an exceedingly hard time of it.

One of the real troubles about the matter was that the protective force in California was up against a game it was not used to playing. It is seldom, in fact, that California has a genuine crisis fire year, demanding skilled fire-fighting on a large scale. Consequently experience had not developed along such lines—as it has necessarily had to develop in Oregon, Washington, and Idaho—but along small-fire, small-crew methods. When the real crisis did come, therefore, it made some trouble.

After it was all over the Service considered the time opportune to review the entire situation through the medium of a board of forest officers to determine, if possible, "wherein the protective work of the Forest Service was not fully efficient and the lessons to be derived for strengthening the defenses in the future."

One result of this board's findings was a strong re-emphasizing of the need for a more extensive system of fire-breaks and other beforehand-prepared strategic defense points in the forests in the southern part of the state,[2] where the unfamiliar disaster had generated some criticism of the Service's methods. The board looked searchingly into the causes of fires. For example, it looked into smoking in general and cigarette smoking in particular, and found

[2] This bore fruit when there was included in the deficiency appropriation act of July 3, 1926 (44 Stat. L., 841, 851), an item of $100,000 for the construction and maintenance of an extensive system of fire lanes, telephone lines, roads, trails, etc., in the four southernmost national forests in California (in addition to the regular appropriation for the same objects in the same forests) conditioned upon the expenditure of a like sum by the state, counties, and other local interests. A similar appropriation is carried in the regular agricultural appropriation act of January 18, 1927 (44 Stat. L., 976, 991), and coöperation with local interests on the same basis yearly is contemplated for a ten-year period.

that of a total of 1539 fires started in California up to September 10, 1924, 28 per cent were caused by smoking, and mainly by cigarette smoking.

The board took account of other hazards which are said to exist in California in many forms. Doubtless, in so doing, it came into contact with the old local controversy about "light burning," the prevention of which, as a part of the forest protective program, is held by a section of Californian opinion to be responsible for recent disastrous fire conditions in that state.[3]

The bad 1926 season constitutes an excellent illustration not only of the formidable nature of the fire menace in general, but particularly of the liability of the unprecedented or the unforeseen in Nature's manifestations to upset arbitrarily the best laid plans of forest fire defense work. In the Western forests from Montana to California, lightning has always been a fruitful source of trouble. Thunderstorms, unaccompanied by rain, sweep over the forests when they are at their driest and inevitably start many fires. Lightning's potentiality for disaster is always taken into consideration and looked out for. But no human experience in the entire history of the West could have justified an anticipation of the terrific electrical scourging that the forests from Idaho to California received in the 1926 season. It was not merely unprecedented but undreamed of. Literally the forests over that whole area, but particularly in northern Idaho, were subjected to such a violent series of thunderbolt bombardments that it was humanly impossible to cope adequately with the resulting blazes, the defensive forces were overwhelmed at several points, and fires became conflagrations. Kaniksu Forest in northern Idaho was the hardest hit area, a quarter of its four hundred thousand odd acres being burned over. In this forest lightning on one day in July started seventy-two distinct fires; on another day in the same month one hundred and fifty. Cases were reported of as many as a dozen trees being shattered within a radius of one hundred yards of the tree from which the fire spread. The defensive work in this forest necessitated the biggest

[3] See *Sunset Magazine* for March, April, May, and June, 1920. Light burning consists of the burning of accumulated trash and debris in the woods at favorable seasons. Its advocates say that the practice, by preventing accumulations of fuel, makes dangerous fires in dry periods much less liable to happen. Its opponents regard the practice as expensive, destructive to young growth, and dangerous at all times.

concentration of men, food, tools, and transportation ever put in a single field by the Forest Service. This bad season was further complicated by a labor shortage in the Northwest. Because of it troops from forts in Washington and Montana had to be called on for assistance in the work.

The extension and the strengthening of our forest fire-fighting lines has been a development that has seemed to move with slowness, but has also been distinguished by a no less certain sureness. It has never gone back. In the past two decades it has speeded up very perceptibly. The chances for a most impressively greater speeding up were never brighter than now. That quickening has been brought to pass by the development of the American forestry movement, which has crystallized into the Forest Service of to-day. It has been a notable development; a notable achievement.[4]

Though fire is the most formidable forest menace, it is not the only tree destroyer against which a protective system must maintain unceasing vigilance. Great damage is done to the forests by various destructive insects and by different forms of arborous blights. Cognizance taken of the former danger by the government forty years ago has already been noted. Reference to the first few agricultural appropriation acts after the forestry consolidation in 1905 will disclose that the new bureau was confronted with a serious insect infestation situation in the Black Hills Region.[5] At various times in the past two decades considerable forest destruction has been caused by the gypsy moth, the bud worm, the saw fly, and several kinds of bark beetles. Within the past four years two severe outbreaks of the last-named insects have occurred; one in the forests of Southern Oregon and Northern California, the other in the Kaibab Forest in the Grand Canyon region of the Southwest. The first-named infestation was especially serious, it being reported in 1922 that an area of over a million acres had been affected, and that

[4] A distinguished American man of letters, who knows the American forest from having lived in it a good portion of his life, and who differs with the Forest Service as to certain details of fire prevention method, sums up thus: "The Forest Service is honest, and is working with great interest and loyalty and energy according to its lights. But 20 years or so of iteration and autosuggestion has made of complete fire protection, in all circumstances and regardless of conditions, not a theory but a religion, an *idée fixe*. You cannot argue with a man about his religion. He has to learn by experience."

[5] *Cf.* Acts: March 3, 1905 (33 Stat. L., 861), and June 30, 1906 (34 Stat. L., 684).

a loss of a billion and a half board feet of lumber, valued at $3,000,000 had been caused. The thing had to be fought cooperatively because, like fire, it paid no attention to ownership lines but spread itself regardless over private forests, state forests, national forests, Indian forests, the general public domain and the revested Oregon and California railroad grants, and the Coos Bay wagon road land grants. Congress recognized the unusual gravity of the situation with an appropriation of $150,000, conditioned upon coöperation in the work by all the parties interested.[6] The desired coöperation took place. In the Kaibab infestation there was coöperation with the National Park Service, the only other forest-controlling interest affected.

The seriousness of the insect menace, not only as a source of vast damage directly, but indirectly in the way of making forests far more susceptible to fire, impelled the Forester to recommend in 1923 the formation, within the Service, of an insect protective system along the lines of the existing fire protective system, able and ready to coöperate with other forest owning and managing interests at need.

The troubles of the Service with respect to tree diseases are concerned practically exclusively with two exceedingly destructive infections which originally got into the country as stowaways on imported nursery stock. One of these, the Chestnut Blight, has practically exterminated the chestnut north of the Potomac and seems destined to complete the operation throughout the country at large at no distant date. The other, the White Pine Blister Rust, has already caused great damage in the eastern part of the country, and has recently appeared in the valuable pine stands of the Northwest, having found its way thither from some old infections in British Columbia. The detructiveness of this disease and the threat of immense damage which it carries for the great pine stands of that region, if allowed to run unchecked, has caused the formation there of a blister-rust advisory board, designed to bring about a unification of preventive and eradicative effort on the part of national, state, and private ownership.[7]

[6] Act of Dec. 15, 1921 (42 Stat. L., 327, 331).

[7] In addition to the more spectacular blight and rust, forest protection has to contend with wood-destroying fungi, which it is part of good timber land management to reduce by thorough sanitation of logging areas.

The problem of the protection of the forest against these several natural menaces, and more particularly the menace of fire, is intimately bound up with the origin, growth, and present great development of what is one of the major manifestations of our "working toward order" in forest affairs to-day. This is the covering of the national forests with such a strategic network of forest roads and trails as will enable the fire suppression force to have at least an even chance to get action at the outset, instead of being obliged impotently to witness a blaze, set in a remote and inaccessible district by one of nature's thunderbolts,[8] attain conflagration proportions before it can be reached. Mention has already been made of the beginning[9] of this work in 1908. It has gone ahead steadily since then to the completion of 15,994 miles of road, approximately 30 per cent of the entire system planned for as adequate to the needs of the forests and adjoining communities. At the same time 73,431 miles of trails have been built, constituting about 65 per cent of the system now envisaged as sufficient for all purposes.[10]

The creation of this essential system of protective improvements has been stimulated by two of the striking phases of concurrent American development—the good roads movement and the growth of motor transportation to its present stature. In fact it would probably be more correct to say that it has been an outgrowth of these things. Forest roads and trails of a sort there would undoubtedly have been to-day had no gasoline engine been perfected and had no demand arisen for the wiping out of rural inaccessibility. But it would have been a puny and ineffectual "sort" compared with the tremendous and efficient system of accessibility insurance which is making to-day. The good road and the automobile in their

[8] Lightning is instanced for two reasons: First, because it is the one fire cause that is neither man made nor man controllable; second, because of the abnormally high proportion of fires it starts on the national forests.

[9] Its beginning, that is, as a regular policy, organized and continuing. Some work of the sort had, of course, been done in the years following the beginnings of forest protection in 1897, but it was of a more or less sporadic nature.

[10] The figures given are as of June 30, 1927. The road system referred to as 30 per cent completed includes all forest roads of whatsoever description, both those intended primarily for public highways and those designed primarily for forest protection and utilization. The trail system referred to consists of trails only and does not include any low-grade roads of secondary importance.

annihilation of rural remoteness have done more than make American agriculture a thing of the suburbs rather than of the backwoods. They have pushed ahead by decades America's "working towards" a perfect forest order.

Some salient facts and figures concerning the close relationship that has existed between the growth of road building in general and the growth in organized effectiveness of forest protection can be grouped here to good effect. While there has been agitation in this country from the earliest times for improved means of communication and travel, the thing that has been referred to in more recent years as the "good roads movement" first attained noticeable momentum about the beginning of the nineties in the last century. It led to the creation of the Office of Road Inquiry, in 1892, in the Department of Agriculture, and until 1912 carried on an unceasing propaganda for better highways, a glint as to the effects of which is afforded by the growth of state appropriations from $2,000,000 in 1902 to $43,000,000[11] in 1912. During the same period twenty-four states created highway commissions or some other form of highway agency. It was in this same decade, it will be recalled, that the beginning was made of the policy of turning back to the counties whence derived a portion of the forest receipts for expenditure in road construction.[12]

In 1912 the principle of federal coöperation in local road work was introduced[13] when the Post Office appropriation act of August 24 of that year[14] provided for the improvement of various post roads throughout the country over which rural free delivery routes had been, or were to be, established, under the general supervision of the Secretary of Agriculture, acting through the direct instrumentality, of course, of the Office of Road Inquiry, which had in the intervening years developed into the Office of Public Roads. The federal coöperation idea was clinched in the law by a provision

[11] This figure does not include county and township expenditures, which amounted in the same year to $100,000,000.

[12] Acts: June 30, 1906, and May 23, 1908, *infra*.

[13] It would be more correct to say re-introduced, as in our early national history, government had participated actively in road construction; such as the building, for example, of the Cumberland Road. Later the work became purely a state, and still later purely a county, affair.

[14] 37 Stat. L., 539, 551.

requiring that a necessary preliminary to the extending of the federal assistance was the contribution, by the various counties or other local administrative divisions to be aided, of twice the amount of the federal aid to be received. Now it is a fact not without significance that just two weeks before the passage of this law of general road application, the same idea had been legislated into our forest road scheme of development by a clause attached to the agricultural appropriation act of August 10, 1912 (37 Stat. L., 269, 288).

That clause provided that the 25 per cent of forest receipts, which the act of May 23, 1908, had decreed was to be returned to the several forest-containing counties of origin, for local roads and schools, was to be increased by an additional 10 per cent for roads and trails within the forests whence derived. This additional 10 per cent was not to be paid over directly to the local governments, but was to be expended in the several forests for road and trail building and maintenance by the Secretary of Agriculture, who was charged with securing, as far as practicable, the coöperation and aid of the local authorities in furtherance of any regional system of highways of which the new roads might be made a part. The next year the act of March 4, 1913 (37 Stat. L., 828, 837, 843), made this legislation permanent. And just a year earlier, be it remembered, the federal-state coöperative idea had found expression in the Weeks-Act provision for fire protection.

For several years prior to the 1912 appropriation, considerable work had been done on the forests, in a small and rather uncoördinated way, in an attempt to extend or connect existing trails and bridge some streams unfordable by pack trains. In 1906, at the request of the Service, a highway engineer of the Office of Public Roads was detailed for a study of road and trail conditions on one of the forests with a view to planning improvements. During this same period some effort was made by local forest officers to get some coöperation in road and trail construction from local road officers, timbermen, and stockmen, with only fair results.

After the institution of the 10 per cent policy in 1912 road and trail construction thereunder was for a time carried on exclusively by engineers of the Forest Service. Beginning in 1914, however, cooperation again began with the Office of Public Roads, highway engineers from that Office being stationed in certain of the Western forest districts to advise and assist the district for-

esters in road and bridge work and furnish engineering supervision for work within the districts.[15]

By this time, of course, the motor transportation stream had grown from its rivulet size of the nineties into flood proportions with a limit of eventual rise that no man could foretell. This upsurging of a new and mighty force had changed absolutely and forever the status of the highway. There was no longer any argument about good roads or the desirability thereof. The "good roads movement" and its propaganda had disappeared, both having become unnecessary. Opposition had been hopelessly drowned out. The only question was as to the amount of mileage that should be constructed; and how it could best be done. America had become a mobile nation. The old days, when men lived out their lives without ever getting out of their counties or even out of sight of their chimney smoke had passed forever. Another transportation-founded transition had arrived that was to affect America's future far more profoundly than that earlier railroad one of the mid-nineteenth century which as we have already seen, had made possible and, considering the psychology and the economy of the day, even necessary the "Era of Magnificent Plundering."

Into the myriad phases of the effect of this vast change upon American life it is both impossible and unnecessary to go. We shall draw attention, therefore, only to the centralizing, federalizing effect of it that flowed out of the vast wiping-out of distance and remoteness that it performed. In a real sense America shrank as a result of the coming of the nation-wide highway system and the motor rolling upon it to an infinitely greater extent than the America of the past had shrunk with the coming of the railroad and the telegraph. And by the same token America is still shrinking, for the end of this great manifestation of transportation is very far from being "yet."

This shrinking has had a tremendous effect upon the trend toward a greater federalization that many things have been bringing about many years. Many things that are after all just one thing—the changing relations of Adventure and Order. Naturally, its effect has been tremendous. It has been a quickener. It has literally hustled time; scythe, hour-glass, and all. It has made govern-

[15] A special division for the handling of forest work was set up in the Office of Public Roads in February, 1914.

mental activities possible to-day that a generation ago would have been hopelessly cumbersome. Some things it has made necessary and advisable that once were not so. Sound economy and proper regard for national defense demand in the present status of transportation that the interests of the country as a whole be given consideration in the immense road creation that is going forward. A national highway policy is being demanded, and is being obtained. It is also helping along another thing that is being demanded—a national forest policy. The two things have been so intimately commingled and related that one could not fail to boost the other. Communities on opposite sides of a national forest need roads across that forest for their proper communication. Those roads in turn are needed as links in national highways. Forests need roads for their protection and development. And so has it been that transportation's time hustling has hustled the nation's forestal development as well. As to that fact the road legislation since 1913 is significant.

Take, for example, the very first bit of it, the enactment on July 11, 1916 (39 Stat. L., 355), of "An act to provide that the United States shall aid the States in the construction of rural post roads and for other purposes." The form of coöperation this law provided for was similar in general to that laid down in the Post Office appropriation act of 1913. Under the newer law, however, the national government was to pay one-half of the cost of construction instead of one-third. It is well to note here, too, that the new law was in a sense an outgrowth of the earlier one, the policy it adopted being embodied in the report of a committee that had been created by the 1913 act to examine into and report upon the question of federal aid in road building. The committee reported in January, 1915,[16] outlining no particular plan, but recommending strongly the general principle of federal aid. A year and a half later the 1916 act, popularly known as the "Federal Aid Road Act," made that principle law.

Section 8 of the 1916 act appropriated $10,000,000 for the survey, construction, and maintenance of roads, trails, and incidental bridges within or partly within the national forests when necessary for the use and development of resources upon which communities within and adjacent to national forests were dependent.

[16] 63 Cong., H. doc. 1510.

This sum was to be laid out over a period of ten years in equal yearly installments, on an equitable coöperative basis to be determined by the Secretary of Agriculture and the appropriate authorities of the coöperating local governments. Expenditures from the appropriation in any local district were limited to 10 per cent of the value of the national forest resources therein available for income, and were to be progressively paid back to the government by the yearly application by the Secretary of the Treasury of 10 per cent of the local forest revenues.[17]

On September 1, 1916, the Secretary approved regulations for the carrying into effect of the provisions of this section. These regulations, which had been prepared by the Forest Service, the Solicitor, and the Office of Public Roads and Rural Engineering, provided, *inter alia,* for the setting-aside for general administratives expenses of 10 per cent of each annual appropriation; the balance to be apportioned among the states, one-half in the proportion that the total national forest area in each state bears to the total state area, one-half in the proportion that the total estimated forest resources in timber and forage in the total national forest area in each state bears to the total value of similar resources in the entire national forest area throughout the nation.

The coöperation at first required by the Secretary of Agriculture called for a 50-50 basis as between the national and the local governments.[18] But it was soon found that this had to be scaled down in favor of the states in order to get anything done at all—coöperation being a *sine qua non* under the act, it will be remembered—and what was done was, very naturally, that which was of especial local interest. Coöperation giving any degree of consideration to

[17] This scheme of reimbursement has turned out to be nothing more than a magnificent gesture. As the reader is by this time aware, 25 per cent of national forest receipts go to the states, under the 1906 and 1908 laws, for local roads and schools, 10 per cent to the Department of Agriculture for local roads and trails in the forests of origin, under the laws of 1912 and 1913, and the balance, 65 per cent, to the miscellaneous receipts of the Treasury. When the question as to the "how" of the proposed reimbursement was put up to the Comptroller he informally decided that the 25 per cent going to the states could not be touched for reimbursement purposes.

[18] It also called for the contribution by the coöperating local government of the entire cost of maintenance on roads constructed under the act, unless a satisfactory showing were made that such amount of coöperation was inequitable.

the development of forest accessibility and protection languished, to say the least.

This situation got a measure of curing out of another Section 8 of another law—the Postal appropriation act of February 28, 1919 (40 Stat. L., 1189, 1200).[19] This act appropriated $9,000,000 in three yearly installments for the same general purposes outlined in Section 8 of the older law— forest, and near forest, road and trail construction on a coöperative basis. The language of the new law, however, was considerably broader, making direct mention of the upbuilding of forest administration, protection, and improvement, and, what was of greatest importance, providing for the direct construction by the Secretary, without coöperation, of roads and trails he might consider necessary for the last-named purposes, or which he might consider nationally important.

It were well to make mention at this point of another law which, though not directly concerned with forest road construction, was such a direct outgrowth of the transportational seething-up which had brought about that construction as logically to require consideration with it. This was that clause in the Agricultural appropriation act of March 4, 1915 (38 Stat. L., 1095, 1100, 1101), permitting the leasing of small tracts in the national forests for summer home sites, hotels, resorts, and for recreational purposes in general. In one sense this authorization was an echo of the earlier law of February 28, 1899 (30 Stat. L., 908), which had granted somewhat similar powers to the Secretary of the Interior with reference to the then forest reserves. The real compelling reason for the newer legislation, however, was the inundation of summer tourists and campers, thus creating a new forest problem in administration and protection that was bound to increase rather than diminish. The summer homes authorization was the first major effect toward the organized handling of the recreational possibilities of the forests, which have come to be looked upon as resources ranking in economic importance with the timber, forage, watershed, and water-power values.[20] The later working-out of this phase of forestal development will be dealt with elsewhere.

[19] It was also helped by the proviso attached to Section 7 of the same act (*q. v.*).

[20] At present—late 1927—there are about nine thousand lessees occupying summer homes or cabins under permit. They produce an annual revenue of about $100,000. This revenue has been increasing at the rate of about $10,000 or $15,000 per annum. In addition to the summer home leases there are some

As has just been pointed out the 1919 legislation helped considerably in getting roads of primary forest importance something like a fair share of the annual solicitude. Nevertheless, a defect developed. There was no clear cut statement as to what proportion was to be expended for roads of primary forest importance; what share the locally desired roads should have. Naturally argument arose. And there was reason for it. Altogether, apart from the local viewpoint, which had developed the selfishness inherent in human nature, precisely as had the "irritated woodsmen" in New Hampshire, another element began to clamor for a bit of the federal expenditure. This was a national rather than a local demand, but was not one concerning itself particularly with the welfare of the forests. It was the voice of the trans-continental touring element, demanding that links connecting state and country highway systems be built across forests for the facilitation of "through traffic." Because the need for roads of this sort was a genuine one, was an added reason why the forest needs had suffered as compared to the general public ones. It, therefore, became obvious that legislation was needed to further the construction of both types of roads and draw a definite and easily discernable line between them. This the Federal Highway Act of November 21, 1921 (42 Stat. L., 212), undertook to do.

Section 23 of that act recognized the need for both types of roads, those of general public importance and those of primary forest importance, and made separate appropriations for them. Two funds were provided for: a forest development fund of $5,500,000 and a forest highway fund of $9,500,000. Coöperation by the Secretary of Agriculture with local governments was permitted, but was not made compulsory. The first fund was to be expended with a primary view to the welfare of the forests themselves, their protection, more economic handling, etc. For these purposes $2,500,000

three hundred to four hundred hotel, store, gasoline station, lunch counter, etc., leases in existence, bringing in about $60,000 per year. Permits are usually granted for an indefinite period unless a considerable outlay by the permittee is involved, in which case a term of not to exceed thirty years is granted. Not more than five acres can be granted to any individual or association. Summer home sites, except in unusual circumstances, are limited to one acre or less in area, and term permits run for from five to fifteen years with privilege of renewal. The rentals charged for summer home sites vary from five dollars to twenty-five dollars per year, depending on location. Five-dollar sites are granted for indefinite periods.

was made immediately available; $3,000,000 was made available July 1, 1922. These sums were to be apportioned to the various states, and to Alaska, and Porto Rico, on a basis of comparative local forest need, to be determined by the Secretary of Agriculture according to certain defined standards.[21] The second fund, $2,500,000 of which was made immediately available, the balance at the beginning of the following fiscal year, was to be laid out in substantially similar manner as regarded general outline, but was to be expended for highway rather than for forest development.

The double forestal development inaugurated under the Federal Highway Act has been continued by authorizations and appropriations contained in later Postal and Agricultural appropriation acts.[22] The various forest road and trail funds and their condition as of July 1, 1927, are shown in the following table:

Funds	Total appropriations to June 30, 1927	Total expenditures[23]	Unexpended balance
10 per cent. Acts of 8-10-'12, and 3-4-'13	$5,602,539.92	$5,207,229.18	$395,310.74
Sec. 8. Act of 7-11-'16	9,000,000.00	9,955,611.57	44,388.43
Sec. 8. Act of 2-28-'19	10,000,000.00	9,361,511.26	638,488.74
Sec. 23. Act of 11-21-'21 (Forest Highway)	25,500,000.00	22,848,334.31	2,651,665.69
Sec. 23. Act of 11-21-'21 (Forest Development) ..	17,500,000.00	16,210,686.47	1,289,313.53
Total	$67,602,539.92	$63,583,372.79	$5,019,167.13

[21] The need for forestal development of this sort with respect to fire protection was emphasized by the fire loss figures for the period 1917-1921, during which the annual loss from destruction of national forest timber by fire was $1,500,000, and the annual suppression bill $1,200,000.—Forester, Annual Report, 1921, p. 34. Sometimes, too, the need receives local recognition; for example, the Oregon legislature memorialized the Senate on February 9, 1923, asking that a system of roads be built through the national forests commensurate with the needs of protection against fire.

[22] *Cf.* Acts: June 19, 1922 (42 Stat. L., 652, 660); February 26, 1923 (42 Stat. L., 1289, 1321); June 5, 1924 (43 Stat. L., 432, 460); February 10, 1925 (43 Stat. L., 822, 852); February 12, 1925 (43 Stat. L., 889); March 4, 1925 (43 Stat. L., 1326); March 3, 1926 (44 Stat. L., 161, 171); May 11, 1926 (44 Stat. L., 499, 530); June 22, 1926 (44 Stat. L., 760); January 18, 1927 (44 Stat. L., 976, 1006); February 28, 1927 (44 Stat. L., 1250, 1252).

[23] The figures for total expenditures are tentative only, as at the time they were secured from the Forest Service complete adjustments of all the funds for the fiscal year 1927 had not been made. They are correct, however, to within a few hundred dollars.

As to the work remaining to be done on the forest road and trail system, and the cost thereof, it was estimated in 1927 that thirty-six thousand two hundred miles, costing $47,528,558, would complete the roads; 110,385 miles, costing $5,679,991, the trails.[24] It is estimated that the entire system will be completed in from ten to something over fifty years, depending upon the annual sums the nation sees fit to expend for the purpose.

In 1923 a high-water mark was attained in national forest revenues, there being an increase of more than $1,000,000 over the receipts for 1922 and of more than $540,000 over those for the previous banner year, 1920. The expenditures for 1923 totalled something over a million dollars more than the receipts, but the Forester maintained that despite this discrepancy the basic national forest situation had come to be the virtual self-support of those national properties. He also predicted their return in the future of a net revenue over operating costs, even though no small part of those operating costs were expended on public services of a non-revenue-producing nature, such as watershed protection and recreational use. The 1923 receipts exceeded by $78,000 the total cost of forest protection and administration. It did not cover the cost of emergency fire fighting, permanent improvements, and special development and research projects. It was these items that caused the million dollar "run-behind." The forester argued that they should be left out of consideration. He said that not only the emergency appropriations but also the cost of maintaining the regular protective system were not properly operating costs, but were instead charges against the time when timber now inaccessible will come into demand. Private owners, he declared, would capitalize such charges as carrying costs. He also claimed that expenditures for permanent forest improvements should not be counted in, nor those for investigations looking to larger and more intensive use in the future. Such expenditures, he asserted, were amply justified on business grounds as making possible greater revenues in the years to come.

The receipts for the fiscal year 1924 fell behind the 1923 figures by something more than $83,000, though still showing a good margin over operating costs. This decrease is emphasized by the fact that the revenues for the use of timber, and those for the use of land

[24] Forest Service, Annual Report, 1927, pp. 38-39.

for various purposes, both showed substantial increases over the figures for the preceding year. This is tantamount to announcing the undoubted fact that the fall-off in receipts for grazing privileges was so pronounced as to wipe out the solid gains made in timber sales and land rentals.[25]

The story of how grazing fees came to be charged for the use of national forest pasturage in the first place has already been told—in a general way. The persisting undercurrent of cow country resentment against that radical departure from the old ways of the old days, when all unhomesteaded land was free common, has also been hinted at. The general system of the leasing of forest pasturage has worked so well and so smoothly in the main from the very first that this resentment has never done much more than smoulder. But it has always done that. It has never gone out entirely. There has always been an element among the stock growers, and not necessarily an inconsiderable element, that has looked upon governmental regulation of national forest pasturage as a sort of "eating out of substance," a species of harassment with "swarms of officers." No need to go into the reasons or the lack of reasons for this feeling. The reader knows by this time that it is an old American sentiment that has played a not unimportant part in our history.

In the early days of regulated grazing this sentiment was not always a mere muttering. There was open warfare now and then, near throw-backs to the old days of range warfare between militant members of that predatory peerage O. Henry called the "Lords of the Lea" and "Barons of Beef and Bone." In this warfare the Forest Service was frequently up against not only the hostility of certain local cattle or sheep men but of general local sentiment as well. There was quite a conflict, for instance, in the Alamo Forest in New Mexico, where certain stock men openly flouted the law quite in the style of Erastus Potter and his friends at Manistee. And just as Ike Willard and his deputies had been prosecuted and persecuted by the Illinois courts for their efforts at the prevention of tree stealing, so were the Alamo rangers who seized the openly trespassing stock indicted by the local courts for larceny. Other rangers in the same region were arrested and jailed for murder

[25] The timber receipts for example were over $300,000 greater than those of 1923, which had in turn exceeded those for 1920, the next highest year, by over $600,000.

when they were obliged to kill a trespassing stockman in self defense. In other words, there was a decided echo in the Southwest of that "resistance by force" which the *Chicago Tribune* had advocated at Manistee in the fifties. Of course the government got squarely behind its officers in these and similar cases and won out in the courts. But the very fact of their having to do so shows how strongly the old spirit of "swamp law" and of "making bold with the King's land" had persisted.

In 1911 came a most important "showdown" between these antagonistic points of view—between Order and Adventure as applied to the forest range. On May first of that year the United States Supreme Court rendered two decisions in cases brought before it from the sheep and cattle country involving practically every phase of the question of governmental range regulation.[26] In these two suits the constitutionality of Section 24 of the act of 1891 and of the 1897 act providing for the protection of the then forest reserves was called in question.

The Court's decision in both cases upheld the government at all points. It was held, in a general way, that the government can manage its property as it sees fit, and that it has all the rights in that connection of a private proprietor. It was held also that no local laws can give rights of wilful trespass as against the government. These decisions and some later ones have definitely settled the general question of governmental regulation of grazing and have made all thoughts of such things as "resistance by force" absurdities. But they have not by any means killed off all resentment or all striving to hold down the degree of regulation to a minimum.

The first grazing fees charged in 1906, when regulation was established, were very low—from three to four cents per month for cattle, and one and one-quarter to two cents per month for sheep. They did little more than cover the costs of administration. They were substantially raised in 1915-1916[27] and again in 1917-1919, when the rates now in effect were established. These rates average

[26] United States v. Grimaud *et al.*, 220 U. S. 506; United States v. Light, 220 U. S. 523. The Grimaud case was brought up from California; the Light case from Colorado.

[27] Small local raises were also made in 1910, and a slight general raise in 1912.

about eleven cents per month for cattle and about three cents per month for sheep, and they fetch in, roughly, about three times the cost of administration.

It has been apparent for a long time that these present rates are much lower, all things considered, than the grazing rates being charged for private and state pasturage; and a raising of them to something nearer their real commercial value has been in contemplation for several years. Some six years ago, accordingly, the Forest Service began an elaborate appraisal of the forest ranges which involved their comparison with some twelve thousand tracts of private and state grazing land in the vicinity of the national forests. This study, which was completed in 1924, indicated that, making full allowances for the points of superiority, undoubtedly possessed by private and state range [28] in the majority of cases, the forest range on a purely commercial basis, was worth fairly about double what it was selling for. That is, it was on the average. Some forest range was found during the study that was already bringing in more than it was worth under the flat rates in vogue. Other range was being sold "away low." Most of it was in between. One of the things proposed in the contemplated readjustment was the doing away with flat or blanket rates and the selling of each piece of pasturage for what it was reasonably worth in the light of accessibility, quality, general convenience, and other factors. Such an adjustment was necessary as a matter of equity between different grazing permittees.

The contemplated "revision upward" had, of course, been an open secret. In fact the Forest Service was scrupulous to take the livestock associations into its confidence in the matter—associations with which it has had most friendly and valuable coöperation for many years [29]—and when its rate study was completed it submitted

[28] For example, the private and state range is usually more accessible than the forest range, has better forage and water, and is less vulnerable to losses by strayage, predatory animals, etc. In making the comparisons the private range of superior type was usually rated at 100 per cent and the forest range then classified as 70 per cent, 80 per cent, or whatever, depending upon the nearness of its approach to the fixed standard.

[29] The Forest Service now has coöperative agreements in force with upwards of seven hundred local livestock associations. These arrangements have almost uniformly worked well, making for a better understanding all around and a better administration of the forest forage resources. Under them the permittees are enabled to coöperate directly in the enforcement of

the results to them for review. While most of them conceded that "We can't question your findings as to comparison between private land and government land" many of them were entirely unwilling to concede the righteousness or the desirability of applying private rates to government land. But of this anon.

There had been talk of putting new rates, or at least a beginning of new rates, into effect by 1924 or 1925. But in 1920 and 1921 a situation began to develop in the cattle country which made it certain that the change would have to be deferred.[30] Partly as a result of the general agricultural debacle which was one of the come-abouts of post-war adjustment, partly because of particular misfortunes which have more directly affected the financing and marketing ends of the livestock industry itself, partly, also, because of a long succession of bad drought years throughout almost the entire range country, the business of cattle and sheep raising has been decidedly "hard hit" ever since the last-named year. Impressive evidence of this is the emergency legislation put through Congress in that year at the instance of the Secretary of Agriculture and upon the recommendation of the Forest Service early in February. This consisted of the acts of March 3, and August 24, 1921 (41 Stat. L., 1325; 42 Stat. L., 186),[31] putting off the payments of grazing fees—ordinarily due thirty days before the opening of the grazing season about March 1—first to September 1, and later to December 31. To some extent this easing-up by the government alleviated the distress in the livestock situation on the forest ranges. Many permittees who became delinquent were able to pay up and thus retain their grazing privileges.[32] Late in 1924, however, there was a total

special rules adopted by a majority of the users of a particular range after they have been approved by the Forest Service as being fair and reasonable. These rules cover such things as salting, rounding-up, the use of blooded bulls, adjustments between different classes of stock, etc. Under the agreements, too, the permittees are given a wide share in grazing administration, including such things as opening stock trails, improving springs, eradicating poisonous plants, etc. In short the arrangements make for a desirable kind of "collective bargaining." The associations make rules for their members. The Forest Service approves these rules and then enforces them.

[30] Nevertheless, there was a strong effort made in the House of Representatives in 1920 to bring about a radical grazing fee increase. Needless to say it did not emanate from any of the range states.

[31] See also joint resolution of November 17, 1921 (42 Stat. L., 220).

[32] A good portion of the fees collected in the years 1923 to 1925 was paid by banks which held the permittees' paper, and which recognized that the retention of their grazing privileges was of prime importance in the process of their debtors' "coming back."

of delinquencies for the preceding three years of $126,000; a sum that is largely uncollectible for the reason that the privileges it represents have been abandoned and the ranches and livestock of the ex-permittees it stands for have passed into other hands. This sum looks big, but not so big as it might when one considers that the total grazing fees for those years of delinquency totalled some $7,000,000.

Hard times are, naturally, more likely to create bitterness than to engender a complacent acquiescence in a tightening of governmental screws and a raising of governmental rates. With the livestock business in its then upset condition it would have been expecting a little too much of human nature—and especially in view of the old resentment at any regulation that has always existed—to have looked for a general giving-in by the stock growers to the government's proposed increases without any outcry whatsoever.

The lines of the gathering conflict—for that was what it seemed destined to result in—were drawn clearly at the convention of the American National Live Stock Association at Omaha, January 15-17, 1924. The report of the president of the association, read at that convention, told of an interview he had had with the late Secretary of Agriculture Wallace the preceding December, at which the Secretary had promised not to raise the fees so long as the stock business was in such a shaky condition. But such a concession, the president maintained, was not enough, and he urged the association to fight any advance at any future time, and if necessary take the fight to Congress and to the President of the United States.

Evidently the remark about taking the fight to Congress was a sort of an *ex post facto* announcement of a *fait accompli*. That the fight was already before Congress, was pretty clearly shown by Secretary Wallace in his address to the same convention, in which he told of a three-hour session in his office some time before the convention met with a delegation of senators and representatives from the national forest states. Some of the legislators at this meeting, it would seem, were a bit vehement in asserting that the cost of administration should determine the limit of the grazing fees to be charged. The Secretary declared that he was personally convinced both of the wisdom and justice of an ultimate raise in the rates, but that he would not have them raised until the stock growers

generally had weathered the depression. He promised positively that there should be no increase in 1924 or 1925.[33]

Forester Greeley's address to the convention was a strong presentation of the case for the imposition of normal commercial rates. He argued that administration of the forest ranges had made for greater stability[34] and had increased their carrying capacity over that existing in the old "free common" days. As evidence of this he cited that, whereas the number of cattle raised in eleven western states between 1909 and 1922 had increased 14 per cent, the numbers grazed on the national forests in the same period had grown 22 per cent; and that sheep "in the same area and period" had dropped 40 per cent in numbers in the states at large but that only 16 per cent on the forests. In connection with these figures he pointed out that while there were one hundred and ten million acres of grazing land in the forests, there were one hundred and seventy-five million grazing acres in the public domain. He conceded that the forest range administration was not perfect, and that the use of forage on the forests was not as stable and efficient as it might be, particularly as regarded small permittees. He maintained, nevertheless, that the livestock enterprises which had been using forest grazing were the most stable in the West.

As to the proposed increases in fees, he pointed out that it was unfair that 20 or 30 per cent of the stockmen should have an advantage over rivals who had to rent private range.[35] He also argued

[33] It was determined in the latter part of 1924 that where the new rates were lower than the old ones they would be applied in full beginning with the season of 1925, but that no increases would be made prior to 1926; at which time, provided a substantial improvement in business conditions had taken place, the new rates would be put into effect on a graduated scale during the period 1926-1929. Some rather vigorous agitation by Western men in Congress during which some none-too-friendly criticism of the Forest Service was indulged in (Cong. Record, 68 Cong. 2 sess., pp. 4254 *et seq.*) in the early weeks of 1925 resulted in a further modification of the regulations by the joint resolution of March 3, 1925 (44 Stat. L., 1259), the curiously contradictory phrasing of which is worth some study.

[34] It had always been contended by some of the permittees that the forest grazing privileges were not stable because revocable at will by the Secretary of Agriculture. Greeley maintained that this viewpoint was not justified by the facts, and that the national forest range in comparison with similar private and state range, or Indian reservation range, was exceptionally secure as regards certainty of tenure.—Forester, Annual Report, 1923, pp. 34, 35.

[35] At the time this statement was made the average forest rates were eleven cents and three cents per month for cattle and sheep, respectively; the corresponding private rates were twenty cents and seven cents.

that a stable administration of forest range at going rates was better as a business proposition than cheap forage at subsidy rates, because while the former makes for stable and business-like investment, the latter makes for speculation.

The Forester's arguments, however, went unheeded; the convention adopting a resolution bitterly protesting against any greater grazing fees than sufficient to cover the cost of administration, and urging Congress to legislate accordingly. That urging produced action within a very few weeks in the shape of the introduction of the Phipps bill,[36] the terms of which at first provided for a cutting in two of the existing grazing fees. As amended later the one-half was raised to three-fourths, and in that form the bill was reported and passed the Senate, January 31, 1925. In the second session of the same Congress, a somewhat similar measure was introduced by Senator Pittman.[37] It provided that grazing fees should not be raised over the rates charged in 1913-14—in other words, practically the rates for 1906.

For a time it looked as though a controversy with certainly unpleasant, and possibly disastrous, results would flow out of this difference of opinion, but happily things have so adjusted themselves as to make it appear that the forest grazing question is in process of being settled happily—not lastingly so settled, perhaps, but at any rate for some time to come.

By the time the American National Live Stock Association assembled for its next convention, at Albuquerque, in January, 1925, the tension had been somewhat relieved by reason of the fact that some new grazing regulations of a nature calculated to allay several of the more serious grounds of cow-country complaint had been placed in effect on the national forest ranges. These regulations were determined upon by the Service not merely for the purpose of silencing discontent, but because facts found in the rate-determination studies, and adduced in conferences with the grazing permittee associations, had been convincing as to their essential justice and desirability. Their basic idea was to make an efficient livestock unit the key to forest range administration; and they called for permit terms of ten years, the possession by permittees of proper equipment, and exemption limits protecting permittees from

[36] 68 Cong. 1 sess., S. 2424.
[37] 68 Cong. 2 sess., S. J. Res. 147.

future reductions in numbers of stock allowed to be grazed below an economic herd as determined by local custom.[38] They all went into effect March 1, 1924, save the ten-year permits, which began to issue January 1, 1925. As a result, the tone of the convention was much less militant than that of the one in the year preceding. A resolution endorsing the Phipps bill [39] was adopted; as was also one calling for a comprehensive study of the entire range problem as recommended in the preliminary report of the Agricultural Conference held in Washington three years earlier upon the call of President Harding.

The instrument for the study contemplated by the resolution was a committee to be appointed by the President of the United States, and to consist of the Secretaries of Agriculture and the Interior and three other members of recognized business experience. Before the situation had developed sufficiently, however, for such a committee to be actually created, Congress took action looking to an investigation of the grazing question. By a resolution adopted March 4, 1925,[40] the Senate Committee on Public Lands and Surveys was authorized to make a searching investigation into the whole question of national forest and public domain administration. While the authorization was exceedingly broad, giving the committee authority to look into practically every phase of the administration, not only of the forests and the public domain, but of the national parks and Indian reservations as well; indeed, of practically every form of government land; the real question aimed at, and the one giving outstanding attention during the subsequent labors of the committee, was the question of grazing administration and control on the forests and the public domain. Between April and November, 1925, a special sub-committee held hearings in all the public land grazing states,[41] as well as in the national capital, in the course of

[38] Much of the complaint of the stockmen regarding instability of range tenure had been based upon the fact that permits were on a year-to-year basis and the further fact that they never could be certain how many head the forest officers would allow them to run. Five-year permits were granted on some forests in 1919.

[39] The resolution was adopted January 16, 1925, and may have had something to do with the passage of the bill by the Senate nine days later. It was not reported in the House.

[40] 68 Cong. 2 sess., S. res. 347.

[41] Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

which some four hundred witnesses were heard, thoroughly representative not only of the grazing interests directly, but of other interests in the grazing states, the prosperity, or the reverse of which, was dependent upon the fortunes of the stockmen. Forest Service officers conversant with the forest grazing situation were encouraged to testify and did testify in numbers; as did officers of the General Land Office and the Indian Service regarding grazing on the unreserved public domain[42] and the Indian reservations. But by and large the hearings constituted the Western stockman's opportunity to tell exactly what he thought of grazing administration on forest ranges, and of the lack of any such administration on the lands in the public domain. And he took full advantage of it.

The prevailing tone in the record of the hearings may be said to be one severely critical of the Forest Service. Apparently the permittee with a grievance against the Service received greater consideration and a more sympathetic hearing from the members of the committee as a whole than were accorded forest users who entertained other views. Considerable commendation of the forest administration was placed in the record, however, and the need for the extension of some form of control to the public domain ranges was expressed rather unanimously.[43]

Specifically, the cow country had several points of vigorous disapproval of the way the forest range was handled. In the first place it differed radically with the findings in the Rachford report.[44] In fact it was the announcing of the range appraisals in that report, providing for a smart revision upwards of most of the forest range

[42] Forester Greeley's comparison, in his remarks to the Live Stock Association in 1924, of the contrast between the forest ranges, where grazing is regulated, and the ranges on the unreserved public domain, where it is not and never has been, was not to the advantage of the latter. Two years earlier in his 1922 report (p. 30) he had pointed out that the lack of regulation was depleting the public domain seriously in vegetation, and that as a result those ranges, many of which adjoin national forests, were becoming a menace to the latter. This because the decrease in herbage on the public domain was accompanied by no corresponding decrease in stock grazing it. The result was a great increase in the demand for forest range, with consequent increase of difficulty of administration in preventing trespass.

[43] Save as to Wyoming. In that state, for strictly local reasons, sentiment is against regulation of the public domain.

[44] The report referred to above, resulting from the four-year study of forest grazing fees as compared with those charged for state and private grazing. It was prepared under the direction of C. E. Rachford, of the Branch of Grazing of the Forest Service.

fees, that may be said to have brought the controversy to a head, and set in motion the investigation by the senatorial committee. The stockmen in general considered the findings of the report "uneconomic." [45] They did not question them so far as the forest range—private range comparison was concerned. They conceded the comparison's mathematical accuracy, as has already been stated. But they maintained, nevertheless, that the basis of that comparison was all wrong in that it either failed to take into account altogether, or not to a sufficient degree, certain dependencies and relationships existing between privately owned ranch property and forest grazing range resulting partly from topographical considerations, partly from the public land disposal theories under which the West had been developed.

And then, apart from the fee question there were other irritants. Probably the biggest one was the matter of stability, which the Forest Service, as we have already seen, had tried to settle with the ten-year permit system on the first day of the year in which the committee hearings were held. But that concession was not broad enough, the stockmen held. A mere permit was too susceptible to capricious rescindment. There should be contracts for ten years, it was urged, rather than mere permits, so that a man starting in to run on a piece of forest range might have a feeling of certainty as to the future and be able to figure accordingly.

Another ground for considerable bitter complaint was the existing method of settling points of difference between the forest range permittees and the administering officers. Under this system it was claimed, and with justice, that regardless of how fair and honest and practical it might be, the Forest Service was essentially in the position of prosecutor, judge, and jury. A measure of home rule was, therefore, demanded in the shape of some sort of local tribunal or board for fact-finding purposes upon which both sides might be represented.

[45] For an excellent and exceedingly interesting statement of the general stockman viewpoint regarding forest and public domain range control, the reader is referred to the testimony of Vernon Metcalf on pages 4099-4147 of vol. 3 of Hearings of 69 Cong., 1 sess., pursuant to S. Res. 347. Mr. Metcalf, now in the livestock business, was in the Forest Service in intimate contact with range control for a matter of thirteen years and is, therefore, familiar with the problem from all angles.

Finally, the stockman urged, he should not merely be safeguarded in his rights by a contract and by a local tribunal to which he could appeal; but when he was given a grazing right on the forests it should be an exclusive right and not one held in common with others. In other words he asked that grazing rights wherever possible should be allocated on an area basis—entitling a permittee or grantee to the exclusive rights in a certain area—rather than on a per capita basis under which he shared a range with a number of other users.

It was inevitable that a drive for legislation aimed at the righting of these real or fancied wrongs should follow. The Stanfield bill [46] was accordingly introduced by the chairman of the sub-committee that had conducted the hearings, on January 16, 1926. Meantime, the Secretary of Agriculture announced on December 30, 1925, that, under the general authority he possessed by virtue of the 1891, 1897, and 1905 laws, and by virtue of the regulations under which grazing permits were issued by the Forest Service, he proposed to remit the grazing fees on the forest ranges of the drouth-stricken Southwest during the greater part of the ensuing year of 1926.[47] A few days later, on January 2, 1926, he let it be known that he had prevailed upon a representative and practical western stock raiser, a man of character, and of the highest standing in his industry,[48] to undertake an exhaustive review of the Rachford report, in order to determine if its findings were justifiable under existing conditions, and if they had been arrived at according to sound formulæ.

Hearings on the Stanfield bill got under way on the fifteenth of the month following, before the Senate Committee on Public Lands and Surveys, and continued till March 11.[49] The bill as originally drafted was opposed by the Secretaries of Agriculture and the Interior and by the Forester; it being objected by the agriculture and forest interest speaking generally, that it would have the effect, if adopted, of putting the forest ranges substantially under the control of the stockmen. The principal objections on the Interior

[46] 69 Cong. 1 sess., S. 2584.

[47] The reader will recall that the previous remissions had been made by special congressional authorization.

[48] Dan D. Casement, of Colorado.

[49] "Grazing Facilities on Public Lands." Hearings on S. 2584, 69 Cong. 1 sess.

side were that the bill was cumbersome, and that it made no provision for the regulation of reindeer grazing in Alaska.[50] The Secretaries of the two departments submitted, in lieu of the proposed legislation, specimen bills which they believed gave to the stockmen the substance of the things for which they were contending without being open to the objections just mentioned.[51] The result was that the bill was amended by being stricken out *in toto* and replaced with a combination of the Interior and Agriculture bills slightly modified. In this form it received the approval of the two departments, and subsequently of the committee. Chairman Stanfield reported it out, March 27.

Before the unfolding of that development, however, the necessity for the legislation, so far as the forest ranges were concerned, was to a considerable extent eliminated. Two days after the original Stanfield bill was introduced, some further regulations governing forest grazing, that were promulgated by the Forest Service, came very close, when considered in connection with previous concessions, to giving the stockmen all they had been contending for. First of all the ten-year permits therefore authorized were given the full force and effect of contracts, not to be revoked except for violation of their terms; and it was provided that they should contain specifications of possible herd reductions by the forest authorities during the permit's life, the same to be definitely limited in amount, so as to give the permit holders the utmost possible in security of undisturbed tenure, consistent with the Service's responsibility for the safeguarding of the properties from the primary considerations of timber and water conservation. It was announced at the time that the Department of Agriculture had never believed in the revocation of permits without cause, and that the promulgation of this regula-

[50] Legislation covering this feature had been sorely needed but vainly sought for many years. On April 5, 1926, Senator Stanfield introduced a special measure covering it (69 Cong. 1 sess., S. 3963), which failed of passage at that session, but was enacted into law at the following one as the act of March 4, 1927 (44 Stat. L., 1452).

[51] These specimen bills are printed in the Hearings on S. 2584, 69 Cong. 1 sess., on pp. 26-29. Adaptations of them, singly and in combination, were introduced in the same Congress as H. R. 7846 and H. R. 9458. A bill providing for forest range administration on somewhat different lines was also introduced by Mr. Haugen (H. R. 10607) in the House, and by Senator Norris in the Senate (S. 3698). Two Phipps grazing bills were likewise introduced, S. 752 and S. 3498. None of them was seriously considered.

tion should remove all doubt on that score in the event of any existing.

Without going so far as the extreme element among the users of the forest range were demanding in the matter of allocation of the range on an area basis, the new regulation, nevertheless, verged appreciably in that direction by providing for the encouragement of individual allotments wherever practicable under local conditions of range use. And along this same line they authorized the suspension of further distribution of grazing privileges [52] during stated periods in regions where economic production of livestock and use of ranch lands dependent upon forest grazing lands would be benefited thereby.

Finally, the home rule demand was met by a regulation providing for local grazing boards, these boards to consist of one member representing the Service and several others to be selected by the grazing permittees. The boards were to have jurisdiction either in single forests or groups of forests, depending upon local circumstances. They were to study and settle grazing questions, and to assist forest officers in the development of grazing policies. Their decisions were to be final unless an appeal were taken to the Secretary of Agriculture, who retained authority to review the findings of the boards, and, where deemed necessary for safeguarding the forest or securing the ends of justice, to overrule them.

The Stanfield bill and all the other proposed forest range and public domain grazing legislation failed of passage in the session of Congress then existing. In the second session of the same Congress that portion of the Stanfield bill having to do with the forest ranges was re-introduced,[53] but likewise failed of passage. A new Phipps bill, providing for regulation of the forest ranges and the public domain in the continental United States and Alaska [54] met the same

[52] That is, the admission to the range of new permittees with a consequent cutting-down of the headage allowed the old.

[53] 69 Cong. 2 sess., S. 4865, introduced December 15, 1926.

[54] 69 Cong. 2 sess., S. 5206, introduced January 11, 1927. It provided, among other things, for the districting of the public domain and its administration by the Department of the Interior; for the holding of fees for forest grazing down to the 1924 rates until 1936; for the creation of local grazing boards to hear disputes subject to review by the Secretary having jurisdiction; and for the return of 50 per cent of the fees collected to the states of origin.

legislative fate. In fact, the only grazing legislation that has been enacted during the past three years of effort is the Alaska grazing law above alluded to.

The report of the stockman arbiter appointed by the Secretary of Agriculture to go over the Rachford report in January, 1926, was completed by the following July. In view of its findings it was considered advisable by the Service that Mr. Rachford should recheck his first appraisal, and a supplemental report containing revised figures showing a material reduction was completed by November 1, 1926. The figures considered fair by Mr. Casement, however, called for a still further reduction and those figures were ultimately approved by the Forester. The final result was that instead of a 100 per cent increase as proposed in the first Rachford report, one calling for something like a 50 per cent rise was adopted. Under it the average rise for cattle will be around four cents per head per month, or from the present average of 10.4 cents per head per month to 14.4 cents. For sheep the increase will be from about 2.9 cents per head per month to 4.5 cents.

Apart from its substantial scaling down of the Rachford appraisals the Casement check-up was very flattering to the four-year survey Mr. Rachford had made. It commended the thoroughness of the work, and asserted that the administration of the forest ranges had been very beneficial to the livestock industry. It also expressed the opinion that the industry had much less to expect from specific and rigid grazing legislational essays than from sensible, flexible administration based on confidence and good understanding between forest officers and users. The desirability, however, of giving legal recognition to forage as a national forest resource to be permanently utilized was expressed.[55]

[55] Some rather extreme conservational opinion expressed at the hearings on the original Stanfield bill opposed any definite legislational enactment covering forest grazing whatsoever, and urged the maintenance of the *status quo* under which forest grazing was administered merely as a function of proprietorship—as confirmed by the Light and Grimaud decisions. This opposition declared itself to be influenced by the belief that definite legislative expression as to the status of grazing would lay the foundation for the gradual evolvement of a matter of grace into a matter of right that would in time become impregnably intrenched and impossible of being pried loose no matter how menacing it might become to the prime consideration of forest control, conservation of the timber resources of the forests in which the

The arbiter, in passing, took occasion to criticize two existing laws, the forest homestead act of June 11, 1916 (34 Stat. L., 233), which has been touched upon elsewhere, and the act of December 29, 1916 (39 Stat. L., 862), commonly known as the grazing homestead act, allowing the homesteading of six hundred and forty acres of non-agricultural land on the public domain. The first he declared had not benefited the true home-seeker in the slightest degree, save in exceptional instances, and had hampered the operations of established permittees on the forests, and handicapped the Forest Service in its range administration. The second had proved in his opinion to be impractical, the area not being large enough for the conduct of a sound grazing enterprise. He declared, also, that the failure of Congress to provide adequate appropriations for range improvements on the forests was an "absurd and short-sighted policy."

Final decision upon the matter was deferred by the Secretary of Agriculture until January 25, 1927, upon which date he was the principal speaker before the annual convention of the American National Live Stock Association, then in session at Salt Lake City. He took this occasion to announce that the present fees, adopted in 1919, would remain in force till 1928; that the Casement schedule would then be put in effect on a graduated scale beginning in 1928 and extending to 1931; that the full rates would then be applied from 1931 to 1934 inclusive; and that there would be no changes in the schedule during the ten-year period beginning 1935 "unless there should be a material change in conditions." He also declared that the revised schedule was to be "established as representing fair compensation for national forest range under present conditions," this being tantamount to saying that the Service considered the new fees as representing full commercial value. In conclusion he said:

And now let me re-emphasize the hope that we may put this controversy behind us, and that to-day may mark a new period of effec-

grazing areas lie. It contended that forest grazing should always be a matter of sufferance only, terminable at will by the forest authority. This extreme view was not shared by Forester Greeley, who does not fear any legislative outlining of the status of grazing on the national forests that does not render the Service impotent to exert control "for the greatest good to the greatest number in the long run."

tive coöperation between the agencies of the Department of Agriculture and the livestock interests in developing the fullest possibilities for usefulness of the national forest ranges.

Such is the status of the most perplexing administrative problem with which governmental forest control in America has yet had to grapple; a problem complicated by many elements, some of them very contradictory. It has been intimated heretofore that the settlement just attained may not be a lasting one. It most certainly will not be if forest grazing is ineptly handled. Happily, however, the chances that it will be so handled are so slim as to be practically non-existent. Forest administration in America now has behind it over a score of years of practical experience. In those years it has learned much. And one of the things it has learned is that, regardless of what the true answer may be to the much-mooted question as to whether rates for forest grazing at less than commercial value figures constitute a subsidy for the permittees, as the Service contends, or a proper and thoroughly economic reward for pioneering effort and for regional and topographical dependency of certain privately owned ranch lands upon the forest ranges necessary to their utilization, as the stockmen contend, an arbitrary attitude on its part with regard to the handling of the grazing resource would be neither politic nor, in the long run, profitable to anybody.[56]

It has learned that radical forestry opinion, such as the sort that at the hearings on the Stanfield bill spoke naively about what "we" propose, consider, and demand, is literally in the position of not being able to see the forest for the trees.[57] It believes in forest

[56] Mr. Casement, in his findings on the Rachford report, stated that he felt that much of the opposition on the part of stockmen to a commercial worth basis for arriving at forest grazing fees had "its origin in nothing more substantial than memories of that era of open, free, and unrestricted use of natural resources which antedates the establishment of the national forests." Having seen what we have seen of New Hampshire, Florida, and Manistee, it is not a hopelessly difficult matter to conclude that Mr. Casement is a shrewd observer and a close reasoner. But while he endorsed the correctness of the commercial principle in the abstract, Mr. Casement doubted the wisdom of its full application in grazing-fee fixing at the present time. He was led to this opinion by the impression, among other things, "that the inauguration of a purely commercial policy now would be in a measure inconsistent with the practice originally approved and heretofore followed by the Forest Service."

[57] The stand taken by this element is frequently of so uncompromising and positive a nature as to suggest Hume's dictum: "When men are the most sure and arrogant they are commonly the most mistaken."

resources of all descriptions being sold for what they are worth, for full commercial value; but where there exist, in the disposal of one variety of those resources, social and economic considerations of a, to say the least, complicating nature, it knows, out of the wisdom of its experience, better than to try to swallow the ox at one gulp.

In passing from the matter of grazing administration it might be well to note that the question of full commercial value has bothered other folks than the Forest Service. It bothered a lot of gentlemen in Congress in 1920, as has already been noted; and some of them tried to put through legislation forthwith designed to make it incumbent upon the Service to squeeze out of grazing all that the traffic would bear. The Service, to its credit, steadfastly resisted this effort, on the ground that the making of such arbitrary raises, right after it had granted five-year permits to many of its range users, would be unfair.

And then the gentlemen who came to the Service a-buying its prime resource, stumpage, have never been able to see why the buyer of grass should get his raw material at rates under the market. Speaking before the sub-committee operating under S. Res. 347, at the hearings held in Portland, Oregon, on September 8, 1925, the Forester-in-Charge of the Western Forestry and Conservation Association about expressed the timberman attitude when he said:

I have observed a great deal of feeling among grazers towards the fees in those regions where the grazing is the chief conduct of the national forests; the grazing fees are too high, and what not. It is not my province to discuss grazing fees, how much they ought to be. I will only have this thought, that a successful management of the national forests that suits the counties, and the States, and the people of any State, would seem to me to require a certain parity among the users, and not any specially subsidized class that has a great advantage over any other user. The timber owner, of course, pays for all he gets. The Forest Service gives it to the highest bidder. We think the Forest Service is a mighty sharp bargainer, and gets all that the stuff is worth as a rule, and nobody has complained very much about that, and it is not my province to say the grazing fees are too low possibly. But, I certainly think that that should be kept in mind, and whether any user, whether grazer or power man or timber man, wants some special consideration before your committee, in the prices he pays for what he gets from the Government he should be placed on the same basis as other users, or you will eventually get yourself into a great deal of trouble.

In the disposal of national forest stumpage there has never been any complicating argument as to whether rates should be based on full commercial value or on the cost of administration. Full value has always been charged and is to-day; and, as Mr. Allen [58] pointed out, the Service has won a deserved reputation as a careful and canny bargainer, insistent upon getting for the people of the United States every cent that such timber as it disposes of, as the steward of the said people, is reasonably worth. For all amounts sold of a value in excess of $500 it has recourse, moreover, to competitive bidding. The highest bidder gets it, and he harvests it, after he has got it, under requirements put down in black and white in a hard and fast contract that bind him to cut only certain timber, and to cut it only in a certain way, and to observe certain prescribed regulations, and, finally, to pay a certain price therefor and then get out and allow the forest to grow for the nation to sell again in another hundred years or so.

If the reader will halt at this point and turn his mind back to the 1850's,[59] just before Isaac Willard made his descent upon the Lake States pineries, and then gradually shift his view ahead through the years to the present, he will be, in effect, reeling off a mental movie—and a more fascinatingly colorful one than was ever filmed at Hollywood—of the gradual growth of America to young manhood, through three-quarters of an amazing century of the play and inter-play of the two great forces of Adventure and Order, as interpreted in terms of that basic American thing, the forest.

He will see the heyday of the old order that Estes told about, with the public timber of the pine lands flowing far and wide over the Central West to the enrichment of the "persons who feared no danger"—timber taken without leave or license, let or hindrance; timber stolen by unrestrained Adventure; timber for which the nation received not one cent by way of direct recompense, but untold billions by way of ultimate result.

He will see the angrinesses of that theretofore unexampled assertion of Order that was Manistee hushed and kept hushed for two decades by the backwash of "Instanterism" and its top-sergeantry and its lip-reprobation of "Compromise." He will see

[58] The Forester-in-Charge of the Western Forestry and Conservation Association quoted above.

[59] Chapter IV.

" Compromise " gradually glow out into an accomplished and recognized fact extolled by the second Wilson. He will see Order surge back in Burdett's ideal of the sale of timber apart from the land and its conservative logging under regulations; and surge too far for its time under the Schurzian *schrecklichkeit;*[60] and be rebuked by Dunnell with his defense of legalized stealing under " Permits."

The beginnings of the efforts for the creation of national forests as we know them to-day will unfold before him as he reviews the '70s, and the '80s;[61] with Plumb's effort in 1878 to legislate the sale of public timber apart from the land along the lines suggested by Burdett; followed by the labors of the Public Land Commission and Donaldson's huge report in the following year. He will see permit cutting legalized by the amended Section 8 of the same 1891 law that in its twenty-fourth section began the national forests. There will flash by '97 and the beginnings of regulation; '99 and the well-meant but futile " working plans "; 1901, with Allen drawing the first timber-cutting contract with the Homestake in the Black Hills; 1905, with the ending of the anomaly of a Forest Service without forests;[62] 1907, with sales of national forest timber to a value of over $2,500,000, and an actual take on timber sales account for the fiscal year of over $670,000 as compared with $60,000, two years before.

In 1907 Secretary Wilson summarized the timber disposal policy of the Service as follows:

> The Government is not a landlord owner, but a trustee. As a trustee it must treat all alike and refuse permission to the first comer to pocket the share of all the rest. Hence timber is given away through free use permits only in small quantities to the actual home maker, who comes to develop the country, and in larger quantities to communities for public purposes. Otherwise it is sold to the highest bidder, but under such restrictions as look to the maintenance of a lasting supply answering to the needs of the locality, to be had without favoritism and without extortionate demand based upon the necessity of the consumer.[63]

From there onward to the present the development of that system is indicated not only along the line of monetary return, with its

[60] Chapter V.
[61] Chapter VI.
[62] Chapter VII.
[63] Secretary of Agriculture, Annual Report, 1907, pp. 61, 62.

showing of a take of $2,958,280.84 in 1924 and $3,366,685.36 in 1926,[64] but along the even more important line of meeting the rational needs of business operation. This latter is a vast and complicated problem, bristling with such minor problems as the designation of working circles, the determination of annual yield, the regulation of the volume to be cut, the size of sales, the reappraisal of prices on large contracts running over terms of years, and the method of cutting to insure reforestation—details, all of them, relating straight back to the purpose of the national forests, as defined in the act of 1897, the " furnishing a continuous supply of timber for the use and necessities of citizens of the United States."

The first of these details mentioned, the working circles, inasmuch as they are among the practical things that twenty years of " experience and necessity," and finding out by rubbing up against the real thing, have evolved out of the unpractical " working plans " of the beginning of the century, deserve a more than casual examination. It can be got in no better way than by noting some recent remarks of Forester Greeley concerning what are now known as management plans. In an article by him upon the general subject of national forest management, he said:

Our management plans are based upon these general policies rather than a strict adherence to any theory of regulation. Fine spun calculations of sustained yield are not possible from the data to be had nor are they regarded as necessary at this stage in the development of the National Forests. The Forest Service went through a period of attempting to develop refined and detailed schemes of regulation, following European precedents. They never got off of paper and into practical operation in the woods. The problem presented by our great overstocking of timber in all stages of maturity and overmaturity cannot be worked out by that type of regulation. Nor is the data on growth and yield yet sufficient to justify it. We must deal with our management problem along broader lines and in more simple and workable terms. The time for refined regulation of the European type will doubtless come, but only after we have worked over our forests into more like a normal distribution of age classes and also after much more comprehensive growth and yield figures have been secured.

In the present pioneer stage we are seeking rather to develop rough and ready plans of forest management, based primarily upon

[64] For the first nine months of the fiscal year 1927, or from July 1, 1926, to April 1, 1927, the forest revenue from timber sales amounted to $2,303,324.93.

removing the stock of old growth timber and extending the period of its removal over the time that must elapse until the existing stands of young growth will become merchantable. The main purpose in most of these plans is to avoid a hiatus in timber cut after the old stock has been taken off and a disorganization of industrial and social institutions which depend on a continuous output from a given unit. In some cases this principle cannot be adhered to strictly because of the silvicultural condition of the old timber or local difficulties in securing its operation at a rate which will permit a sustained yield when the change comes from the old growth to young stands. In many instances all that can be attempted is to control the rate of cutting so that we will have enough old timber to maintain operations until the young stands reach maturity, at which time a revision of the annual yield will be necessary. A scheme of logging under which the areas of old timber will be worked in the order dictated by their silvicultural condition, just as far as existing transportation facilities will permit, is always one of the most important features of the management plan.

The working circle, or unit of management in the National Forests, is laid out in accordance with topography primarily or a combination of topography with transportation facilities from the timber to the nearest point for its manufacture. In a typical western National Forest, this usually means that each major watershed is a separate working circle. The boundaries of the circle are often adjusted to the specific industrial or community considerations which are placed among the purposes to be served by the management of the unit. This is particularly true in the small working circles on a number of eastern National Forests, where maintaining established local industries or providing woods labor for rural communities are set forth as definite objects of management We believe that as far as practicable the government should get down to the specific conditions and needs of the locality in laying out its schemes of management; and this factor has been given more and more weight as our general policy has developed.

* * * *

It goes without saying that forest management on the National Forests is still in the rough and pioneer stage. We have an immense variety of conditions with which to deal. We are under the necessity of developing technical methods as we go. We cannot withdraw these forest areas from use until schemes of regulation satisfactory to the technician have been completed; nor in our judgment is there need for such types of regulation under present conditions. Taking the two ideals of a sustained yield of timber products and a permanent and desirable type of forest industry and forest community, we believe that we should go right ahead under rough and ready plans of management dictated by common sense and by such growth and

yield data as can be obtained. Constant improvement in these first management plans will, of course, be essential. The whole scheme is fundamental to the conception of the national forests. It is simply a question of using the best tool that we can devise for immediate requirements and then constantly seeking to improve that tool.[65]

Now in the 159 national forests there is a total timberland area of about eighty million acres. This area contains between six hunderd and seven hundred working circles. So far something more than one hundred management plans have been worked out and approved for various of these circles, about one-third of them being for areas in the eastern or Weeks law section of the country, and the balance scattered here and there in other regions where they have been called into existence either by local demand for national forest timber, or for silvicultural reasons; *i. e.*, such a pressure of overmature timber as to produce conditions of stagnation or retrogression that can only be arrested by the use of the ax. Other plans are being worked out from time to time.

This important work has a triple aspect. There is, first, the formulation of the general policy, the staff work, so to speak, by the responsible heads of the Service. Then, in general conformity with this policy, there is the determination by the local officers, primarily the district[66] officers, secondarily those in charge of actual forests, as to how the general policy can best be applied locally. Finally, there is the direct formulation of the actual plans by the local staff in each forest on the basis of available data on volume, growth, and yield. The forest officers are then in position to go ahead in the knowledge of how much timber to cut, and when, where, and how to cut it. After a plan is formulated by the local forest personnel, it must receive, first district, and then Service, approval.[67]

As just stated, this actual front line determinative work is done by the local forest employees as a regular part of their day's work.

[65] *Journal of Forestry,* March, 1925, p. 223 *et seq.*

[66] The entire reserved forest area is divided into districts which are in turn divided into forests, and the forests in turn into ranger districts.

[67] By way of illustration—the plan for the Cœur d'Alene National Forest in Idaho was approved by the Service in June, 1923, calling for the removal of fifty million feet of saw logs per annum for all time. The net area of the forest is about six hundred and sixty thousand acres, of which five hundred and fifty thousand acres are productive forest land. The average period for the youngest and intermediate classes of trees to reach maturity is estimated at eighty years.

That is to say, it is in the vast majority of cases. Occasionally there is outside assistance in the case of a big and important project. The Service maintains a small force of loggers, lumbermen, cruisers, scalers, and logging engineers, whose function it is to sort of rove around from forest to forest, wherever their extra and expert services are required. But the bulk of the work is done locally and in the rough and ready manner already described. Plans are made for particular areas, neither at random nor in accordance with any especial plan of order or precedence, but merely as economic or silvicultural considerations dictate.

It is probable that for some time to come the work will go forward along these same simple lines and at about the same rate. To prepare plans of a more refined and technical nature for the several hundred working circles yet remaining to be covered, would be a stupendous undertaking that would require the creation and maintenance of a large force of specially trained men and cost several million dollars per year. The conditions calling for such an elaborate development lie in the future. It is estimated that it will be necessary to create plans for approximately half the untouched working circles within the next decade.

Generally speaking, the Forest Service itself cuts no timber. To be sure, it builds a few culverts and bridges with national forest trees. To be sure, too, silvicultural situations do sometimes arise, either in connection with burned, diseased, or bug-ridden stands of trees, or stands where thinning becomes imperative, which must be met by some direct cutting by the regular Service personnel. But such situations are decidely the exception rather than the rule and the total amount of timber they represent is comparatively negligible. For all practical purposes, so far as genuine utilization, in the ordinary meaning of that word, is concerned, it may be laid down axiomatically that national forest timber is always cut by the persons to whom it is sold or to whom it is given.

There are consummated each year something like thirteen thousand five hundred sales of national forest timber.[68] Roughly, these sales may be classified as big sales and little sales, or, to put it another way, advertised sales and unadvertised ones. They are all

[68] The timber only is sold. Title to the land always remains in the government.

made in conformity with the timber sale provisions of the 1897 law, as amended by the acts of June 6, 1900 (31 Stat. L., 661), and March 3, 1925 (43 Stat. L., 1132). Big, or advertised, sales are for amounts of timber in excess of a total valuation of $500. They constitute something like one-tenth of the total number made. Single sales of this description have been made for qualities of timber having contract values in excess of $2,000,000 per sale and involving large expenditures by the purchasers for mills, camps, logging roads, equipment, etc. Comparatively recent examples of sales of this sort include, for instance, one on the Cascade Forest in Oregon covering six hundred and eighty-five million board feet, mostly Douglas fir, occupying some fifteen thousand acres of land, and having a value of $1,500,000. The management plan under which it is being removed calls for a cutting rate of fifty million board feet per year for a period of fourteen years; and the contract provides for a readjustment of prices in 1928 and at three-year intervals thereafter.

Examples of other large recent sales are one of eight hundred and ninety million board feet of yellow pine on the Malheur Forest in Oregon; one of nine hundred million board feet of yellow and sugar pine on the Lassen Forest in California; and one of three hundred thirty-four million cubic [69] feet, or three million three hundred forty thousand cords, of western hemlock, Sitka spruce, and Alaska cedar on the Tongass Forest in Alaska.

All of these sales are governed by substantially the same basic conditions. That is to say, the purchaser is to remove annually not more than the amount of timber specified in the management plan governing the area in question, and the price paid is to be re-adjusted at agreed-upon intervals during the progress of the operation to conform to local going rates plus local conditions of accessibility, cost of operation, etc. The Alaska sale is peculiar in that the timber to be obtained is to be used for the manufacture of wood pulp; most of the timber in the Alaskan national forests being primarily valuable for pulping purposes rather than for lumber. As part of the consideration for the acquisition of this timber, the purchaser agreed to erect within the forest of its origin a pulping plant of not less than one hundred tons capacity daily, to start with,

[69] A lumber cubic foot is 12″ x 12″ x 12″; a board foot is 12″ x 12″ x 1″.

and an ultimate capacity of two hundred tons daily. This condition was imposed in line with the avowed policy of the Forest Service to create out of Alaska's unique combination of abundant pulp timber, immense potential hydro-electric power, and doorstep deep-water transportation and all-time paper and paper pulp reservoir, on the lines of the Scandinavian Peninsula,[70] capable of supplying perpetually about one-third of America's needs in those commodities.[71]

The installation of permanent improvements is not an incident, however, that is peculiar to the Alaskan situation. Most of the large scale sales of national forest timber in the continental United States are on mountainous and inaccessible areas that can only be utilized by the construction—oftentimes at great expense—of lines of railroad for fetching the felled trees out. The industry being designed for permanency, too, under the management plan—working circle system, the construction of mill buildings on a large scale equipped with costly machinery is coming to be a more or less regular incident of the larger timber sales.[72]

For example, a very large sale now running is one of some seven hundred million board feet in the Sierra Forest in California to a purchaser owning an approximately equal amount of timber in the same general area. His contract calls for a two-year construction period, during which time he will have to spend some $3,500,000 in merely getting set to utilize his holdings and his purchase. This preliminary development includes the construction of fifty miles of standard guage, main line railroad. A clause in the contract provides that this road is to become a common carrier. Later it can be used to excellent advantage for getting out much other national forest timber at present locked up by inaccessibility. This sale is an especially desirable one from the government's point of view, not only by reason of the money it will bring in, and the forestal

[70] *Cf.* Pulp Wood Requirements of the United States, Department of Agriculture Bulletin, No. 1241.

[71] In 1921-1923 the Forest Service, with some assistance from the Federal Power Commission, made an extensive reconnaissance of timber and water power resources in Alaska to obtain essential information for prospective establishers of pulp mills.

[72] Investments of purchasers in railroads, mills, equipment, etc., amount to more than $40,000,000, representing more than a thousand mills and thirty thousand employees.

development it will further through the construction of the railroad, but because the timber to be got out is overmature and subject to recurring epidemics of insect infestation which constitutes a potential menace to the forests over a wide territory.

Not all of the "big" sales instanced above are on such a large scale. They constitute the exception rather than the rule. A much larger number of the big sales are in the more or less immediate vicinity of the $500-minimum. Others are in between—such as a seventy million board feet sale now going on the Cœur d'Alene Forest in northern Idaho, where the purchaser, an Eastern match manufacturing company, had to build a ten-mile railroad that will become the property of the government at the completion of the contract, in about five years, and be of great value in opening up great tracts of national and private timber now lacking transportational facilities.

Another in-between sale is on the Conconino forest in Arizona. It totals eighty million board feet of western yellow pine on twenty-eight thousand acres, is valued at $180,000, has a contract period of five years, and a yearly cutting limit of twenty-four million feet. A sale of approximately the same size on the Crater Forest in Oregon has a contract period of nine years, which illustrates the wide variation in local conditions. Differences in such things as topography, accessibility, etc., may, and frequently do, mean that the getting out of a tree in one region may be a vastly more expensive and difficult operation than the same job in another.

Now of course these big sales, and especially those of them that, by running up into the millions of dollars and feet, and the thousands of acres, may aptly be termed super-big, are decidedly the most impressive ones that the Service makes. Numerically, however, they are very much in the minority. Just as the super-big sales constitute but a very small proportion of the total sales exceeding the legal advertising limit,[73] so does that total make a small showing

[73] That is, $500, above which figure the law requires advertisement and the consideration of bids. The limit was $100 until March 3, 1925. The following example of a timber sale advertisement is taken from a recent issue of a leading lumber trade journal:

"Sealed bids will be received by the Forest Supervisor, Libby, Montana, up to and including June 18, 1925, for all the merchantable and dead timber, standing or down, and all the live timber marked or designated for cutting on an area embracing about one hundred and thirty acres within Sections 1 and 12, Township 30 North, 32 West, M. P. M., Parmeter Creek Watershed, Kootenai National Forest, Montana."

in comparison with sales below the line. Of the approximate total of thirteen thousand five hundred sales of all sizes, about thirteen thousand are of amounts of timber of a value of $500 or less made to individuals or small companies.

These sales are always made without the formality of advertising for bids, being arranged informally by agreement between the purchaser and either the ranger in charge of that portion of the particular forest in which the timber desired stands, or the forest officer in charge of the entire forest.[74] When arranged through the subordinate officer the sale is usually consummated in from one to five days; when the higher officer handles it the time required varies from one to fifteen days. Consummation of an advertised sale requires naturally a longer period, as all advertisements must run for at least thirty days. It takes as long a period as two hundred days to consummate some of the large scale sales.

Sales of the sorts described hitherto, both informal and advertised, are known collectively as commercial sales; the timber in all such sales being sought for frankly profit-making purposes on the part of the purchaser, and being sold by the government in all cases for not less than its appraised value, said value being determined by full consideration not only of its quality and quantity and of going market prices for material of a grade similar to that sought to be purchased, but also of such things as accessibility and the preliminary outlay necessary—for roads, logging equipment, etc.—for getting the felled trees out.

In addition to these commercial sales there is also a type of sale known as a cost, or non-commercial, sale. Sales of this description are only made to homestead settlers and farmers for domestic use on their own holdings. They are made informally, without advertisement, and have no restrictions as to the amount of timber purchased. Only mature, or dead, or down timber which can be cut and removed without injury to the forest is disposed of through sales of this kind. Any attempt to dispose of timber so obtained, directly or indirectly, for profit of any sort, will automatically take the sale out of the non-commercial class and bring about the imposition of a penalty. No direct charge is made the purchasers for the timber itself, but they are required to pay the actual cost of making

[74] Officers in charge of entire forests are known as supervisors. Rangers are in charge of the ranger districts into which the forests are divided.

and administering the sale, the said cost—per thousand feet board measure or other unit—being determined from time to time for each national forest region where similar conditions exist. Some twenty-five million feet are disposed of annually in sales of this sort to about six thousand settlers and farmers.

Besides its disposition by sale, commercial or otherwise, national forest timber may be removed under what is known as "free use," whereby timber in amounts not exceeding $20[75] in value may be taken annually from the forests by individual users; or under "administrative use," whereby the Forest Service may dispose of varying amounts for the protection or improvement of the forests.

Free use has for its primary object the protection and silvicultural improvement of the forest and consequently is restricted—save in very unusual cases—to dead, buggy, or blighted timber or to trees whose removal the general need of the forest for thinning-out imperatively demands. It is likewise restricted, as to beneficiaries, to *bona fide* settlers, miners, residents, and mineral prospectors for firewood, fencing, building, mining, prospecting, and other domestic purposes; to persons constructing private telephone lines across the forests which will be of value in protecting the forests from fire; and to certain branches of the government for use in the prosecution of their particular lines of work.[76] About thirty-five thousand permits for free use are granted annually.

The administrative use of national forest timber has substantially the same reason back of it that has already been noted in the case of free use—the protection, improvement, and general development of the forest. It is simply a more inclusive term. Free use, for example, may be, and frequently is, merely an exercise of that right of administrative use which the Forester and, on a progressively lesser scale, his various subordinate officers, have, under the regulations, to dispose of timber the use or removal of which is necessary to protect the forest from injury, or for the construction, maintenance, or repair of roads, bridges, trails, telephone lines, and other improvements of value for the protection or administration of

[75] Ordinarily. Depending upon the exceptionality of the circumstances, however, timber is sometimes taken in free use up to $100, or $500, or even, in certain cases, in considerably larger amounts. In Alaska the ordinary restrictions are considerably more liberal.

[76] For example, the Bureau of Reclamation; the Navy Department; the Alaska Railway Commission.

the forest, or to conduct investigations, by sale, free use, or otherwise, as may be most advantageous to the United States. Under this right timber may be disposed of for the reasons already mentioned in connection with free use, for the creation and preservation of the various physical improvements just mentioned, whether the actual work necessary thereto is performed by forest officers,[77] by coöperators with the Forest Service, or by special use permittees; and for such research and investigational purposes as experiments in silvicultural practice and in making, handling, etc., of various forest products. In short, administrative use is a sort of blanket, or omnibus, phase of forest regulation, designed to cover all those features of national forest timber utilization not covered by the ordinary sale or use permit.

In such a brief résumé of national forest timber utilization as the foregoing has necessarily been, only the outstanding features have been dealt with. Of the details of such forms of utilizational procedure as the emergency sales which are sometimes made without regard to the ordinary modus, nothing, more than the mere mention, will be said here. Nor will it be necessary to speak extensively of the sales of miscellaneous forest products—such as, for example, Christmas trees and various kinds of barks used commercially—or of sales of naval stores, save to say that, in general, they are governed by procedures substantially similar to those already outlined. The same general practice covers what is known as "timber settlement"; that is to say, the payment or other satisfaction for timber destroyed or removed in connection with the occupation of national forest land under permits of various sorts.

To go further into detail respecting the removal of timber from the forests would be impracticable here as well as unnecessary. The refinements of the several procedures are available in various Forest Service publications.[78] It will be enough to say that it is to be

[77] An example of an occasion upon which forest officers actually do cutting work.

[78] Consult especially "The Use Book," which contains in elaborate detail the various steps necessary to be taken in the procurement of national forest timber, or in the utilization of any other national forest resource, together with the regulations governing the same, made under the general authority of the 1897 law. This book has gone through six editions, the last one having appeared in 1918. There was published in 1926, however, an edition covering forage utilization only, the second or third edition devoted to that resource exclusively. An edition covering water-power only was published in 1911.

borne in mind that back of all national forest timber utilization stand those fixed yet flexible principles, evolved out of the experience and the developing policy of the Service, to which Forester Greeley has given expression in the quotation regarding management plans appearing above. There must be limitation of cut; there must be certain silvicultural and degree-of-utilization requirements. And there are. But they are flexible, and "rough and ready" rather than merely rigid. They have an ideal which they are never supposed to lose sight of, but they recognize the hard facts of economic law, nature, and human nature. Thus, they are happily devised for the progressive fitting of new adaptations to new conditions.

As applied to the cutting permits of the Service—which are contracts in effect—they lay down in all cases the following:

1. What and where the material purchased is and the basis for determining its merchantability.
2. The price to be paid therefor, with provision for readjustment at intervals if the sale runs to exceed a certain period.
3. The cutting time limit and minimum annual or periodical cut.
4. The determination of the volume of the material by scaling, counting, measuring, or however.
5. The protection of unsold timber during the sale and its future safeguarding through disposal of logging debris, etc.
6. The protection of national forest interests by the adoption and observance on an approved logging plan for the specific operation.
7. The agreement to assist in preventing and fighting forest fires during the life of the operation.

The foregoing requirements are general. In addition there are almost always some special ones covering unique features of particular cases. All very large sales, for example, are circumscribed rather minutely in the matter of fire protection with special clauses.

These fire clauses cover such things as the stationing of special watchmen at noon and at night at donkey engines, the screening of oil-burning equipment to prevent fires from soot or sand, the equipping of wood-burning boilers with efficient spark arresters, and the stationing of special men at operating wood-burning donkey engines to watch for sparks during periods of unusual fire danger.

Two other important requirements upon the purchasers of extra large areas of timber call for somewhat intensive patrol and extra

care in safeguarding railroad rights of way constructed to get the timber out. During the fire season moving patrols are required to cover all parts of the sale areas where work is actually proceeding. They visit fallers and other small groups of workers at a distance from the larger crews, check up falling areas at noon and night, follow workers into camp, and cover any other points of danger in order to make sure that no smokers' or other fires are left unnoted.

The obviously important detail of clearing railroad rights of way and donkey engine emplacements of inflammable material, is covered by requiring that the burning of such material take place, so far as is practicable, at times when there is no danger of the fire getting away into the woods. This means that the operators must plan their work ahead and provide for the fireproofing of the rights of way before the fire season commences.

The contracts also cover such things as the restriction of smoking or the building of camp or lunch fires on logging areas to safe locations, or their total prohibition in times of great danger at the option of the forest officer in charge; the strategic distribution about the area of *caches* of fire-fighting equipment; the installation of such equipment upon locomotives, donkey engines, and other woods machines.

In regions containing a considerable admixture of diseased or blighted trees the sanitary clause of the contract is so worded as to require the removal by the purchaser of all such material within the area of his operations.

It will be understood, of course, that these requirements of the contracts vary to some extent with the different forest regions of the country, being much more stringent in such tinder-box areas as California and northern Idaho than elsewhere. Considerable discretion, too is placed in the hands of the local forest officers as to the rigidity or flexibility of their imposition. The basic principle of the Service in the matter is to so handle each situation as to safeguard at once the nation's interests and not impose onerous restrictions upon the purchasers of the nation's timber; it being recognized that the nation has a very real, albeit an indirect, interest in the welfare of the industry. This point of view is distinctly recognized in certain most important elements in the general Forest Service code. For example, Forest Service officers in charge of timber sales are required to be well trained in fire-control technique. Like-

wise it is recognized that the Service should appreciate its obligation to make every reasonable effort to protect purchasers against loss of equipment, interruption of business, and cost of suppressing fires for which they are not responsible—such as those set by campers, tourists, hunters, stockmen, etc.

Finally, the general fire code of the Service requires that part of the fire plan that is worked out for every national forest must be a correlation of the fire-control duties and responsibilities of Service employees and timber purchasers. For every large sale, and for other sales when necessary in the judgment of the local officer to whom authority has been delegated, it is laid down that there must be prepared as a supplement to the main fire plan for the forest a subsidiary plan for the area under operation, to be drawn up by the local officers and the purchasers in conference. This minor plan must state clearly the purchaser's duties in case of fire and for which he is responsible under the contract's terms, and a clear correlation of the duties, responsibility, and authority of the purchasers and the local forest officers.

Now, as has already been related, the Service does not log or lumber the timber over which it exercises control; those operations being performed by the purchasers or the donees thereof. But it does, in connection with those operations, and in fulfillment of its established functions, engage in a wide range of activities that pretty nearly run the entire gamut of its work, not merely of a utilizational nature but of any nature. Straight administration, utilization, protection, development, investigation, and information are all touched more or less nearly by the cutting and removal of national forest timber.

Direct Service activities in connection with the cutting of national forest timber have already been touched upon in what has been said of the staff work in the preparation of the management plans, based on the direct field work by the regular personnel in the forests, assisted by the roving force of specialists in cruising and estimating the timber, mapping the various age classes, computing the growth rate, and determining the rate of annual cut.

When the way has been thus cleared for the actual disposition of the timber there is still much to be done by the Service in the consummation of that disposition. In the case of commercial sales there must be cruises and appraisals of the desired timber preliminary

to the final transactions. These are generally made by the local forest force, but sometimes by the small special expert force already referred to, depending partly upon the size but more upon the circumstances peculiar to the contemplated operation. And at the same time timber is appraised the conditions to be made a part of the contract in order to insure the Service requirements as to silviculture, utilization, fire protection, etc., being carried out must be determined upon. In case of cost sales the cost of sale administration must be determined.[79]

After a sale has been entered upon or a use permit granted, and before the cutting or removal begins, the timber to be taken must be marked or designated by the local forest officers. Live or green timber must always be marked for cutting. In the case of use permits, areas are frequently designated in which cutting can be made by the permittee without particular trees being indicated.

With the actual beginning of the cutting, the work of the forest officers becomes supervisory in character. An overseeing of operations takes place in order to make sure that the Service requirements in silviculture and utilization are being complied with, that slash is being piled according to agreement, stumps cut at the proper height, young growth given all practicable protection, etc.

The Service's final activity in connection with timber utilization is performed when the saw logs—or the ties, or poles, or whatever, as the case may be—are got out of the cutting areas and piled at convenient places for a final checking-up as to the amount taken. This is done by scaling, measuring, or counting the cut timber.[80] In contract sales it is an invariable rule that no lumber can be removed from the place designated for piling until it has been verified, as above related, and then marked by a forest officer.[81] In the case of

[79] The cost of sale administration for all forest regions has been worked out and is simply applied according to the locality involved as the sales come up. There is no preliminary determination for each sale, though there may be some deviation from the standard fixed rates, up or down, if some peculiar local condition not existing at the time the general rate was determined make such a change advisable.

[80] Saw logs are scaled by the Scribner Decimal C log rule. Ties are counted. Poles are measured by length and top diameter; mining timbers by the linear foot. Shingle bolts go by the cord; as does pulp wood.

[81] It goes without saying that after the scale has been completed there is an adjustment to square up the appraised figures and the proven ones, the result of which is either a refund by the government of excess payment or an additional piece of remuneration.

the use permits this requirement is sometimes waived when there is cause for believing that reasonable compliance with the regulations can be secured without it, a substantial saving in costs of administration secured, and increased dispatch attained in meeting the needs of the purchaser.

National forest timber utilization of to-day, in short, constitutes a bit of a contrast to the conditions existing around Manistee in the year 1850. The history of the American forest from that far-off day to the present moment illustrates strikingly the eternal truth that "the old order changeth and giveth way to the new." The changing is more or less constant, moreover, and will continue to be for some time to come. The room that it possesses for future expansion is ample, for at the present time six times as much timber could be cut from the forests each year as is cut at present without impairing their future yielding power. But it would not be economically or socially wise at this time to harvest them to the limit of reproductive safety. The annual yield will increase gradually as changing conditions warrant.

There was an echo, but not a sinister one, of the old forest lieu clause in an act passed March 20, 1922 (42 Stat. L., 465), authorizing exchanges of privately owned forest lands lying within the exterior boundaries of national forests for government owned land or stumpage in any national forest in the same state. It is hoped and believed that this law will be mutually beneficial by enabling the government to consolidate its holdings, and thus make them more handily administrable and utilizable; and by enabling the private owner to secure stumpage more advantageously situated in a commercial sense.

Though at superficial glance this law and the old act,[82] might seem to be similar, a very slight comparison discloses their radical variance. The old act gave a right, the new one gives a privilege. The old act allowed selections to be made by the private swapper of an equal *area* anywhere on the public domain[83] in the United States. The new law allows him to trade his holding for a government holding equal in *value*—area being a secondary consideration—provided the government cares to make the dicker. This the govern-

[82] "Forest lieu" clause of June 4, 1897; repealed March 3, 1905.

[83] In 1897, of course, most of the fine stands of public timber were in the public domain.

ment does not have to do. Under the old act the exchange was mandatory upon the government and the selection by the private swapper was a matter in which he alone was concerned. If he had a thousand acres, say, of stony mountainside thinly covered with scraggly scrub and the snags of old burns, and wished to trade it for an equal area of fertile bottom land heavily covered with first class timber, the government could not refuse.[84]

The new law merely simplifies the process of effecting exchanges where they are mutually desirable. No further legislation is necessary in a case where the government and a private owner decide that they are willing to trade. The details agreed upon and the necessary papers passed, the thing is done. Authority to exchange on the side of the government is vested in the Secretary of Agriculture and the Secretary of the Interior jointly. Interdepartmental consideration of all proposals is thus guaranteed, but there is no statutory obligation to consider disadvantageous proposals put forward by private owners, much less approve them.

Although a rather plentiful besprinkling of privately owned tracts throughout the national forests renders an extensive program of exchange possible,[85] the Forest Service so far has preferred to make haste slowly. Only a few minor exchanges were effected in 1923. In the fiscal year 1924 exchanges involving some forty-two thousand acres were appraised and approved by the Secretary of Agriculture. Since then the average has not increased noticeably. The Forest Service has adopted a policy of conservatism in appraising private values and is endeavoring to see to it that no exchange is made that does not redound to the public interest. Several desirable exchanges are now being considered. Data are being accumulated that will be of value in future transactions.

Meantime the forests are occasionally acquiring additional area in other ways than by trading, formal setting aside, or proclamation. Thus, when in 1924 the Supreme Court decided that twenty-four timber and stone entries originally patented in 1902 had been

[84] An amendment to the new act passed February 28, 1925 (43 Stat. L. 1090), allows the government and the private swapper to make reservations of timber, minerals, easements, etc., provided all private rights, etc., so affected, remain subject to state tax laws.

[85] At the close of the fiscal year 1926, the national forests had a gross area—*i. e.*, an area inclusive of private and state holdings within exterior boundaries—of 184,123,951 acres, and a net area of 158,759,210 acres.

fraudulent,[86] that portion of the area represented by them which lay within the Plumas Forest in California became a part of that forest upon the automatic vacation of the patents.

The joint observational experiment undertaken at Wagon Wheel Gap, Colorado, in 1910, by the Forest Service and the Weather Bureau for the purpose of studying the relationship between forest cover and stream flow, erosion, silting up of streams, etc., after running for sixteen years was finally terminated September 30, 1926, when the station was dismantled and the personnel withdrawn. Comment upon the progress of the experiment has appeared intermittently in the annual reports of the two bureaus since 1911. The Forest Service reports contained references to it from 1911 to 1916 inclusive, and again in 1920. In other years it was not mentioned. The Weather Bureau noted its existence in 1911 and 1912[87] and was silent thereafter till 1918. In 1918 to 1920 inclusive it was commented upon. Since the latter year it has only been mentioned in the report for 1922. In 1922 also an elaborate joint report was published as a supplement to the Monthly Weather Review of the Weather Bureau.[88] This report, which is really a profusely illustrated monograph of fifty-five large pages, contains numerous tables of the results of the observations taken on the area up to 1920 when the first stage was completed; *i. e.*, the stage of observation of both watersheds in a forested condition.

In late 1919 or early 1920 one of the watersheds was completely denuded and then burned over and the second period of observation began.

Until the complete reports of the experiment have been published,[89] any dogmatic assertions as to exactly what has or has not been established thereby might seem to be rather premature. Certain

[86] United States v. Curtis, Collins, and Holbrook, 262 U. S. 215.

[87] The silence subsequent to 1912 may have been due to the fact that the Weather Bureau was reorganized in 1913. Dr. Moore, who had been one of the enthusiastic prime movers of the beginning of the experiment, retired as Director of the Weather Bureau in that year.

[88] *Monthly Weather Review,* Supplement No. 17, Streamflow Experiment at Wagon Wheel Gap, Colorado. Preliminary Report on Termination of First Stage of Experiment. By Carlos G. Bates, Silviculturist, Forest Service, and Alfred J. Henry, Meteorologist, Weather Bureau.

[89] The final report on completion of the second phase of the experiment at Wagon Wheel Gap was published early in 1928 as Supplement No. 30 to the U. S. Weather Bureau's *Monthly Weather Review.*

things, however, seem to be fairly well-established. First, and most important, the results of the experiment, however, valuable and authoritative they may prove with respect to the particular region in which they were ascertained, will have scant value, or no value at all, as to other regions of the country with different conditions of soil, climate, and forest cover. Especially will they be of questionable value for application to the humid regions of the Eastern and Southeastern United States, the scene of the pre-1910 controversy which set the experiment going. As to this point the Forest Service and the Weather Bureau are in entire agreement.[90]

Secondly, there seems to be some dissatisfaction in all quarters as to the conditions surrounding the experiment. The area where it was held, for example, which was originally selected by the Forest Service, and which was at first believed to be pretty near ideal for the purpose, developed with the passage of time, certain defects as regards the use to which it was put. The soil turned out to be one of the most porous known to geologists, a soil that to a very large extent needs no protecting humus to assist it in the drinking up of the water that falls upon it. Naturally this fact tends to render somewhat questionable any figures obtained on its behavior under varying conditions of cover. After the cover on the one watershed was removed an increase in run-off and in silt deposit was noticeable, to be sure, an increase which, according to the Forest Service, was considerable in percentage but inconsiderable in volume. But with the quality of the soil what it is, what particular significance can be attached to this occurrence? What does it prove that was not already established? It will be recalled that at no time did Colonel Chittenden, or any of those who sided with him in combating the forest-extremist viewpoint in the years prior to the passage of the Weeks Act, deny that a forested slope would erode less readily than a bare one.

[90] In this connection it is not without interest to note that the Weather Bureau, in its 1911 annual report, warned of this very thing, saying that results obtained in a semi-arid region would be of no value as a criterion for determining problems in connection with run-off that obtains in the humid East, and expressing the hope that a similar experiment be started in the White Mountains or the Appalachians. But in their report for the following year, 1912, the Weather Bureau people reversed themselves as to this pessimistic warning. The fears of the worthlessness of the test for comparison with Eastern conditions were, they said, probably groundless.

Again, since the one watershed was denuded at Wagon Wheel Gap it has shown a reluctance to stay that way. A luxuriant growth of aspen has sprung up. The Forest Service tried to find a stockman who would be willing to keep the growth down to the grass roots with a herd of sheep, but did not succeed in doing so. Consequently the denuded watershed became progressively less and less reliable an area for the study of run-off and erosion under completely deforested conditions.

All in all the experiment will probably justify itself. The data accumulated through it will not be valueless by any means. But it can probably be stated now without fear of contradiction that in so far as coming up to original hopes and prophecies is concerned, it has been a bit of a disappointment. It has established no facts of universal application, and it has developed no evidence that would tend to demolish the assertion made hitherto that some of the claims made by the extreme forestry zealots at the time of the agitation for the Weeks Act amounted to the presentation as established truth of that which was not then, and is not now, definitely known to be true. Colonel Chittenden's position, that the regulating influence of forestation, indisputable under normal conditions, was of no avail under abnormal ones,[91] and that it was at least questionable that deforestation had any appreciable effect upon the silting-up of river channels, has certainly not been overborne by anything reported up to the present at Wagon Wheel Gap.

The chief value of this experiment will probably lie in its way-pointing effect. That many extremely valuable data can be collected by elaborate tests of this nature, there can be little question. Other experiments along similar lines will doubtless be had, now that Wagon Wheel Gap has shown the way. The present experiment was unique, the first of the sort ever attempted in the United States, and the second in the entire world.[92]

[91] Rather strikingly corroborative of this were the results of a most unusual rain storm, of what might be termed super cloudburst proportions, that occurred in Carter County, Tennessee, on June 13, 1924, occasioning considerable loss of both property and life. In that storm hillsides which were heavily wooded were eroded down to bed rock, and formidable bars composed of the resulting debris were thrown out into the streams. Some interesting photographs of this devastation are to be seen at pp. 311-13 of the *Monthly Weather Review* for June, 1924, Vol. 52, No. 6.

[92] The other experiment, lasting twelve years, was in Switzerland. The results there are also said to be not entirely satisfactory. See p. 2 of Supplement 17 of *Monthly Weather Review* referred to above.

The district organization of the national forests was extended in 1914 and 1921. District No. 7 was created on July 1 in the former year for the more convenient administration of the new forests created under the Weeks Act in the White Mountains and the Appalachians; as well as for the forests created from the public domain in Florida, Arkansas, and Kansas.[93] Headquarters of the new district was established in Washington. Previous to this change the nearest district headquarters had been in Denver.

On January 1, 1921, the district system was enlarged to its present scope by the creation of District No. 8, comprising the two national forests in Alaska, with a regular resident district forester in charge. Connected with this latest administrative enlargement is a story not entirely without interest.

The Alaskan forests, originally created in September, 1906, had been accorded from the first a considerable measure of "home rule." Practically everything had been handled locally by the resident supervisors and rangers. Only the big things had been referred to Washington.

But with the passage of time and the development of the country considerable discontent developed; part of it justifiable. There was red tape and delay in the general administration of the affairs of the territory. There was some overlapping of jurisdiction as between the several federal agencies and the territorial government; enough to create a little justifiable irritation.

The outburst of propaganda about Alaska that began to be visible and audible about this time of too recent a date to need more than a passing reference. There was the tributary province complaint in general, and one of the particulars was the old New Hampshire complaint about the Broad Arrow. That is to say—"locking-up." The Forest Service was "locking-up" the forests of Alaska and the development of the country was being retarded.

The Service denied the "locking-up" charge with the claim that the two Alaskan forests had been open since 1906 for the use of timber and for various other purposes on extremely liberal terms;

[93] The Kansas forest, comprising some three hundred thousand acres, was abolished by executive order in 1915. In 1916, during the debates in Congress over a bill proposing the making over of a portion of the area to the State of Kansas for a game preserve (See 39 Stat. L., 233), the ex-forest was referred to as a "pretended forest without a tree on it."

that they were being cut to the extent of forty-five million feet annually, and were furnishing 86 per cent of the lumber being used in the territory, supplying saw mills, mines, canning factories, and other industries. Sites were being freely granted, it was pointed out, for canneries and other fish industries, fox farms, and establishments of every kind adapted to the region.

Recognizing astutely, however, that all avoidance possible of even an appearance of the "tributary province" situation would seriously affect the situation, the new district move was made, as has already been related. Speaking of the new creation the report of the Forester for the same year recognized that "evils of red tape and delay are inevitable if administrative jurisdiction is retained in Washington over matters that should be despatched by resident officials in Alaska."[94]

The Forester's report for that year, however, is chiefly notable for a most able, temperate, and logical presentation of the case against the sort of "home rule for Alaska" that was being demanded by some of its proponents.

After pointing out that the two national forests in Alaska contained twenty million acres and over seventy-five billion feet of timber, or about 6 per cent of all the timber in the continental United States, the Forester declared that

> Except where partially covered by national forests, all of the other timbered regions of this country have been or are now being exploited in the unrestrained interest of immediate commercial profit. *While in the main a necessary economic process*[95] this form of exploitation has largely wrecked the productive power of our forest resources. To-day the country is paying the piper. And under the pressure now felt, the public must step in and seek, by one means or another, to gather up the remnants and by slow and costly effort restore the productive forests which our feverish and short-sighted exploitation has destroyed.

In the great forests of Alaska, the Forester argued, we had an opportunity to develop a vast primeval wilderness in the light of what we had learned in our three centuries of "experience and necessity." We had an unparalleled "occasion to profit by"—in a

[94] Forester, Annual Report, 1921, p. 5.

[95] An excellent statement from the standpoint of sanity and common sense; an incomprehensible one as regards the strategy of cause-riding.

new way. To do this, "locking-up" was not necessary; neither was the stifling of initiative and "irreverence for the impossible." A proper policy of conservation, on the other hand, would give these invaluable things full play, merely taking the precaution of seeing to it that a humanized and common-sense Broad Arrow, a Broad Arrow that comprehended human nature, before it comprehended "got to," should be observed. In other words, a policy encouraging Adventure to the limit so long as it submitted to Order in the shape of business method, thrift, a sane taking thought of the morrow; a management that would perpetuate rather than devastate, and so make the utilized resource permanent rather than temporary.

Alaska's great coastal forests, it is the view of the Forest Service, are unexampled as a source of pulp wood production, not merely because of the enormous quantities of potential pulp they contain but because of two other things as well: First, enormous undeveloped water-power; and, second, peculiarly perfect accessibility—deep water right up to the edge of every mill site. The Service is dreaming—and not by any means impractically—of Alaska converted within thirty or forty years into a second Norway, with great paper industries as permanent as those of the Scandinavian peninsula and capable of supplying perpetually at least one-third of our paper needs. To this end terms are being offered to paper manufacturers more favorable than can be obtained anywhere else. But the working-out of this certainly desirable plan is a thing calling for solid and gradual development rather than booms.

The conclusion of the Forester's argument was devoted to some wholesome plain speaking. Alaska had a perfect right, he said, to local self-government, but it was always and forever a part of the United States. Its forests were also the nation's forests, and in their utilization the nation as a whole had to be considered. Which was only another way of saying that Alaska's forests were crown forests, to be developed for the good and for the safety of the empire of which Alaska was a part rather than for the advantaging of Alaska alone.

It is probably safe to say that the late President Harding was subjected to a terrific pulling and hauling over the Alaska business. At any rate he heard enough about it to be impelled to go on that Alaskan journey in the summer of 1923, from which he was fated

never to return. In Alaska he looked about him, heard what the delegations had to say, and then in his last speech, at Seattle, rendered his verdict.

Alaska, he said, was growing normally and well, though not spectacularly—a state of affairs infinitely to be preferred to "boom times" with their inevitable sequel. The territory's growth must be an "economic process," in which he favored a continuation of sympathetic administration of federal affairs with local officers given all the authority possible. He specifically approved the Forest Service policy of development of the forest industries along pulp and paper lines. This policy, he said, offered capital every reasonable encouragement and only imposed limitations that insured permanency and sustained productivity. Concerning the contract the Service was offering to pulp and paper manufacturers he said,

I venture, with some knowledge of conditions in paper-making countries, to state that no better contract, indeed none so good, can be secured in any of them.[96]

The Alaska game law of May 11, 1908 (35 Stat. L., 102), made an unintelligent distribution of authority as between the Departments of Agriculture and Commerce, assigning to the former the regulation of the killing of sea lions and walruses, and to the latter that of minks, martens, sables, and other land fur-bearing animals. This awkward situation continued until 1920, when a provision in the Agricultural appropriation act of May 31 of that year (41 Stat. L., 716) adjusted the powers of each department to its functional and special equipment; the step being taken largely because of the recommendations of a joint committee of the two departments which met early in 1915 to devise a plan to simplify the administration of the Aleutian Islands Reservation with respect to the propagation and protection of fur-bearing animals.[97]

[96] A rather definite forecast of what his Alaska decision was bound to be was contained in a speech President Harding made some weeks earlier in Spokane, on July 2, 1923, while en route to the Territory. "We have done," said he, "with the era of thoughtless and reckless exploitation of our domain. There will not again come a time when imperial estates will be distributed with lavish hands to enterprising gentlemen whose only claim is that they would like to own them."

[97] All laws relating to Alaskan game animals and birds and land fur-bearing animals have been superseded by the recent act of Jan. 13, 1925 (43 Stat. L., 739), which practically puts all power in this regard in the hands

With game protection and administration in general the Forest Service has naturally been concerned throughout its entire history, partly on its own, partly in coöperation with states and with other government bureaus and agencies. The first appropriation act passed after the transfer of the forest reserves to the Agricultural Department [98] provided for coöperation of forest officers with the local authorities in game protection. The Forest Service secured for the Biological Survey in 1912 the first really dependable figures on the number of big game animals killed on the national forests, the greatest hunting grounds of the West. Until 1916 the extermination of predatory animals on the national forests was a regular part of the Service's "day's work." That year, however, the work was given over to the Biological Survey,[99] as the organization better fitted both by general background and the nature of its main job for the handling of it. The Service has since continued to coöperate in the work, however, using traps, bait, poison, and ammunition supplied by the Survey. The change was made because it came to be recognized that the predatory animal question constituted a menace of major proportions to the livestock industry that should be handled as a primary consideration rather than as a side line or a subordinate activity. The nature of the basic work of the Survey made it the logical instrument for the combating of this very serious danger. Animal killing was right "in its line." The real seriousness of the predatory animal situation is illustrated by the actual annual material havoc wrought about the time the work was shifted. Depredations on livestock caused a yearly loss of about $12,000,000. This was bad enough, but a more sinister feature developed in the late 1900's in the shape of epidemics of rabies among coyotes and wolves. Beginning, so far as is known, in California, these outbreaks spread throughout the entire Western country and resulted in considerable loss of life, the maddened animals losing their natural timidity and raiding ranches and even in some instances

of the Secretary of Agriculture through an "Alaska Game Commission" of his own appointing. "Home Rule" in Alaska has been somewhat enlarged by the recently enacted *ex-officio* Alaska commission act of February 10, 1927 (44 Stat. L., 1068), which, however, makes no change in Alaska forest administration.

[98] Act March 3, 1905 (33 Stat. L., 861).

[99] Act of March 4, 1915 (38 Stat. L., 1105). The authority was contained in a proviso attached to the Agricultural appropriation act for that year.

entering towns. Upon several occasions in different districts children had to be sent to school with armed guards.

The Agricultural appropriation act for 1923[1] carried a new item in the shape of an appropriation of $10,000 for the construction of camping facilities on the national forests to take care of the ever mounting flood of automobile tourists that good roads plus cheap motors has let loose upon the land. Appropriations for the same purpose have been carried in each appropriation act since then. The money is expended for the construction of inexpensive stone fire places and the installation of such rough sanitary facilities as will help to prevent the camp grounds becoming affronts to common decency. Recreation engineers have been employed for short periods to direct the work.

Some criticism has been levelled at the Service in connection with these recreational activities, it being alleged from time to time that an attempt is being made to run an opposition show to the national parks. But the criticism is hardly just. The people have come because a new era in transportation has come, and they have brought a man-size problem with them. About ten million people traverse the roads and trails of the forests each season, and at least half of them stay for longer or shorter periods in these public camping places, of which there are now some fifteen hundred in existence in the forests. The problem has come to the Service unsolicited and it has come to stay. Obviously it is right in the line of the Service's work to prevent stream pollution in the forests and keep down the fire hazard as far as possible.

In some respects the situation has swamped the Service, particularly in the way of sanitation. Despite the fact that it has done its utmost, the sanitary condition in some of the most intensively used camping places has become unsatisfactory; so much so that the health authorities of the states in which the forests lie have begun to complain.

It is not an easy problem. The forests belong to the people and it is in the highest degree desirable that the people should get into them for purposes of recreation. But it is not desirable that the people should make garbage dumps or ash heaps out of them, for then the people would no longer be able to enjoy them.

[1] Act of May 11, 1922 (42 Stat. L., 507).

After all it is a thing that comes squarely back to "the people." The people own the forests, just as they own the nation. To keep the forests from burning up and to keep them from becoming "affronts to common decency" is a thing that will cost money. How much money do the people want to spend for the purpose? How much regulation do the people want imposed upon themselves by themselves that these ends may be attained?[2] The Forest Service has been rather clever in passing some of this work on to municipalities and public and philanthropic organizations and thus making rather slender resources go a longer way than common.[3] But this method cannot be pursued indefinitely.

The recreational problem, in short, has emphasized the thing that has been forced into prominence by the fire protection problem—the need for a forest policy that will be national in scope.

[2] It is encouraging to note that this matter is beginning to receive popular attention. The First National Conference on Outdoor Recreation met in Washington in May, 1924. Immediately after it closed its sessions, the National Conference on State Parks met at Gettysburg.

[3] The City of Los Angeles, for example, has assumed the responsibility for the upkeep of certain camp grounds in certain of the Southern California Forests. *Cf.* act of February 24, 1925 (43 Stat. L., 969).

CHAPTER XI

THE MOVEMENT FOR A NATIONAL FORESTRY POLICY

"The time has now arrived when we must decide whether it is the interest of the United States to resort to artificial culture and plantations . . . or to do without them. A wise policy does not confine itself to the present moment, but looks to the future, and demands of us the adoption of a system that will confer lasting benefits upon our country in time to come."

The reader might well be pardoned for inferring that the foregoing argument for a "wise policy" in forestal affairs was a thing of recent utterance; a part of that propaganda for a coördination of effort and a unification of planning in the answering of that riddle about where the faggots are going to come from to set the tea kettles of to-morrow singing, of which, during the past decade, we have heard so much.

But the reader so inferring would be shooting wild by a mere matter of something less than a century. The words are the words of Col. White,[1] Floridian delegate to Congress in the long ago, and they were written on the twenty-second of January, 1831, in the course of the uproar over that exploit in salesmanship which drew down upon his head, and upon the head of his friend Judge Brackenridge, the unkind aspersions of the precise, and politically canny, Mr. Branch.

The remarks are repeated here not for the purpose of flashing a striking coincidence before the reader's eyes but rather to impress upon the reader as strongly as possible that that movement for a national forestry policy of which we have seen increasing evidences here and there in our consideration of this first quarter of the present century, is not a thing of shining newness.

Colonel White was arguing for a national forestry policy, no less, when he made the observations just quoted. Possibly, to be sure,

[1] American State Papers, Naval Affairs, IV, 114.

he had other things in his head than "lasting benefits to the country in time to come," as his political enemies intimated; but even so his argument was sound, containing, as it did, the gist of the more elaborate arguments for the same end that are being made to-day.

But the real point brought out here is just this—forestal development toward a more national, less local, viewpoint was just as real, if less apparent, in 1830 as it is to-day. It couldn't help being, because development in general was moving that way as relentlessly as the glacier slips seaward. It was all a part of that "working toward Order" which, even in "wildest sansculotteisms," goes ever forward. Look at all our history. Has it not been from first to last a movement for a national policy in all sorts of minor ways and in one great and all-inclusive major way? What were the groping efforts of the colonies towards a working together? What was their loose alliance in the Revolution? What was the Constitutional Convention of the young states under the spur of the "experience and necessity" of the Confederational chaos? What was the half century of hurly-burly over certain irreconcilable localisms that constantly increased in irreconcilability, and consequently in irritability, as ever-improving transportation and the progress of invention progressively diminished remoteness? What were all these things but high lights in a restless moving toward a more perfect team work among the various sections of the country, toward a policy, in a word, more perfectly national?

Likewise, what has been that centralizing tendency of recent years—a tendency viewed with elation by some, with misgivings by others—but a phase of that same moving?

And as with generals so with particulars, including the forest particular. It does not take a stretch of the imagination to perceive in the alleged Jamestown episode of the wastrel "gentlemen," grumblingly cutting down trees under the spur of "no work, no eat," the beginning of a movement toward a national forestry policy. Theirs, too, was a constrainment by "experience and necessity." The rampagings in New Hampshire, too, were a working in that direction, for all the *prima facie* look they have of a working *away* from Order. They were a working toward Order that, considering the needs and the harsh circumstances of the day, was the best thing of the sort that could possibly have been devised. They were a part of that seething up of a new breed with a new viewpoint that the

bringing together of the Anglo-Saxon and America, and especially the forestal aspect of America, made inevitable. They were part of a great working toward a national policy, but it was to be a new sort of a national policy, an American national policy. The inept enforcements the irritated woodsmen disobeyed and fought against represented Order of a sort, to be sure, and a national policy of a sort, but it was not suited to the time and the place. It was bound to give way to the beginning of a new working toward Order more fitted to the new and unprecedented situation.

The various strivings that came after the attainment of nationhood, crude as they were, all points the same way. The live-oak effort, the Manistee effort, the Schurzian effort, the tree-planting episode, the propaganda of early years of the present century—all these things were gropings, to a considerable extent blind and unconscious gropings, but none the less inevitable ones, toward a more nationalized state of forest affairs. The country was acquiring cohesion, was growing together, was sloughing off parochialism. A reaching after more coherent national policies naturally resulted. There came the development represented by Dr. Hough and his times; then the able work of Fernow, which first made of the movement for a national forestry policy a genuine, definite conception rather than a more or less blind instinct. Then the next phase unfolded, the phase blended of the vast development of athletics, the flowering of the cult of the outdoors, the upsurge of the conservational idea. Fernow's strong, solid, pioneer foundations were there to build on when this great boom came; and to work from toward that great trend in the national direction that came in 1911.

That great trend, of course, was the national, unified fire protection effort that the Weeks Act made possible; a thing that has been hinted at hitherto, and to which some special consideration can now be appropriately given. For the passage of the Weeks Act marked a far more vital change in American forest thought than is commonly realized. By the same token it was part of a larger vital change in general viewpoint that in very great degree went unheeded by the country as a whole. To be sure, there was, and still is, agitation about federal usurpation and the gradual extinction of the states, not nearly all of which was, or is, merely alarmist in nature. But has it roused the country to a frenzy of alarm over the threatening dangers of "castle government" and the onward march of

satrapyism? It has not. What is more it is not going to—howsoever eloquent it may be as a whole; howsoever valid many of its arguments may be. That is to say, it is not going to up to a certain point. Up to that line which represents the limit of "shrinkage" brought about in the country in the past quarter century by many influences, of which the automobile and its resulting highways have been the most spectacular, but not by any means the only ones, it will sound its tocsins in vain. America is a changed place by reason of those influences and a certain shifting of balance as between the general and local has become not merely a desirability but a necessity. Many things properly viewed as exclusively local problems once are such no longer. Changes should be. Changes must be. To resist them regardless, is to whistle in the teeth of a gale of wind.

The most important thing that took place was a continuing growth of that spirit of coöperative fire protection, in the Northwest particularly and throughout the whole Pacific Coast region generally, that we have noticed hitherto. The natural result was to emphasize to the lumber industry in the region of its largest holdings and greatest activities, the region containing the last great stand of virgin forest in America, not merely the feasibility of a unified forest policy but the absolute necessity thereof. Over those holdings, which had constantly grown in value to 1907, and which even before the enormous artificial stimulation of 1914-1918 had represented immense investment, hung the continual menace of possible destruction by fire—a destruction against which no insurance was to be purchased. True, they could be protected by men and precautionary measures; but of what avail was such protection likely to be if it was piecemeal as to area covered? The most intensive protection hither might be rendered useless by no protection yon. But how was unified control to be brought about, and who was to take the lead in it? Was it to be national, state, or private? Or a bit of all three? And how about the private end of it in a country founded on "irritation" and the "eating out of substance?" Suppose some private owners, out of tightness or carelessness, or a resentment at "harassment" told the general welfare to go to? Clearly, again, the time had arrived for a further concession by Adventure, a further strengthening of Order, in the general interest of all. Hence the conference of federal, state and, private timber interests at Spokane, in 1907, out of which came the idea of the

Western Forestry and Conservation Association. Hence the Oregon fire patrol law of 1913, to cite but one of the first outstanding evidences of that realization in the region where lumber was "King" and will be "King" for many a year to come. A working toward forest order, this, of a most impressive nature. Here were the "woodsmen" not only suffering "irritation" but actually seeking it.[2]

But there were other things than fire, other relentless processes of nature inexorably making for a growth in the coöperative tendency. One of them was the coming false of the prophecy frequently made during the years of the creation of those vast holdings in the Douglas fir region—not always, as we have seen, in ways the most virtuous—to the effect that the immense consolidations were going to spell merciless monopoly in time to come; that they were to be held until all the rest of the country's timber was gone and then used to extort unconscionable profits.

Now it may be that some such magnificent "occasion to profit by" as that had been dreamed of in the good old days. But if it was, the dreamers had a rude awakening. At any rate those did who had overborrowed to overinvest in the sure thing that was "bound to come." The sure thing didn't come. The very fact that the region of the great acquisitions for holding for a "killing" was the last virgin timber frontier, beyond whose borders lay not new forest expanses but the Pacific Ocean, operated to prevent it by making human ingenuity look ahead to a time when no lumber might be available. Cement, steel, and other lumber substitutes began to appear in the markets at prices that constituted a plain handwriting on the wall that come what might in the lumber world there was a very definite limit to the level to which lumber prices might rise, and that to hold and hold with visions of an airtight monopoly to come was simply to take desperate chances. As to the immediate present there was the long rail haul to the places where the lumber was needed and there was still Southern lumber that did not carry that handicap. And finally, the nightmare was continually rendered more hideous by tremendous carrying charges—ever increasing interest and taxation that went on and on toward what was seen to be in the long run, and provided that run were

[2] Among the seekers there were, as a matter of fact, descendants of some of the irritated gentlemen along the Pascataquacke.

long enough, a " getting clear " cost that simply could not be passed on to a consumer who, was assured of substitutes, of at least a usable sort, as soon as a, by no means remote, " last straw " point was reached.

What followed can best be described in the words of a forester and an economist, who was more than a witness and a student of that unfolding phenomenon, but in a very real sense an actor in it.

The result was attempt to liquidate by sale or manufacture, far from stimulating interest in conservation or forest-growing, but on the other hand assuring the public competition rather than monopoly or price-fixing. Every upward fluctuation of possible profit increased production, which like a trip valve, quickly restored the former level or a lower one, as each such attempt added to superfluous mill capacity. Unfortunately for the consumer, this was not always reflected in lumber prices, differences being often absorbed by labor transportation, and like factors.[3]

In a word, there began to come to the lumber industry the first beginnings of a conception that the tremendous charges represented by virgin timber holdings were getting close to an excess over what the cost of growing new trees to compete with it would be. Speaking of that conception the writer just quoted says:

As a rule, history shows us, this conception comes to a nation gradually, through economic forces. Except in a few hopelessly decadent countries, these forces begin to improve forest conditions and forest use just at that stage of development when it becomes apparent that the diminishing virgin timber supply can no longer be certainly available at a cost less than that of tree-growing. While it is so available, no one can afford to grow trees to compete with it. When the balance is turned or sufficiently foreshadowed, interest in tree-growing begins. Either too low virgin stumpage prices or too high production costs defers it, and neither sentiment nor legislation can hasten the project[4]—at least not as a feasible business project unsupported by public subsidy—much in advance of a satisfactory adjustment.

April 1927

[3] E. T. Allen, " America's Transition from Old Forests to New," *American Forestry,* XXIX, 235. Mr. Allen, formerly District Forester in the Forest Service in charge of the Northwestern region, has been for several years Forest Economist for the Western Forestry and Conservation Association.

[4] Which is substantially what Fernow had pointed out a quarter-century earlier.

There will be some who will call this point of view selfish. It may be so, but is it, after all, any more selfish than cause-riding? And is there not a possibility that it is merely an exemplification of what has been quoted hitherto to the effect that "We are all taught by interest"? Or of what William Dean Howells had in mind thirty years ago when he said in the course of a pro-forestry utterance:

> We talk about public spirit as if it were something the individual could rightly be expected to cherish to his loss; but that is nonsense; the only public spirit possible, or even desirable, is that which the public has.[5]

Now right in that last clause lies the point that illustrates what was going forward after 1911. The public was acquiring a spirit that was new; and yet as old as creation. It was old in that it was founded on self-interest. It was new in that the vast economic changes wrought by three centuries of development had brought about realignments, revaluations, in the basic elements of self-interest. Here was rich, mighty America, founded on forest wealth and forest influences, face to face with the fact that the bottom of the bin was in sight; with the definite knowledge that "inexhaustible resources," in timber at any rate, was only a phrase; with the question as to how a nation of inordinate wood users was going to readjust its wood-dependent industries to a woodless or, near-woodless, condition. It was recognized that this crisis lay in the future; that it was not a thing of a literal to-morrow.[6] There was timber left to last for not a few years to come. Just how many, no man knew; though figures were put on it as dogmatically as they had been in Schurz's day. But that the crisis was certain to come unless measures could be devised to ward it off, was patent. It was equally patent that if rich, mighty America were to con-

[5] *Forest Leaves*, IV, 2, 19.

[6] A conservative observer writing of the Puget Sound forest region in 1923 said, "Let nobody understand that lumbering is a declining industry or soon likely to be. It will last in full vigor for at least another generation, and long before exhaustion of the native timber resources a second tree growth will rise in merchantable form and supply. With scientific husbandry of the forests there should never come a time when lumbering will not be a foremost industry in this region. But the old theory that the forests of Washington are inexhaustible is a fallacy so obvious that one wonders anybody ever was stupid enough to accept it."

tinue to exist in that enviable forest-created condition—a thing it was certainly to her self-interest to do—she would have to take steps. Self-interest was shifting; "public spirit" was shifting. Here was recognized a national problem calling for a national policy. And that growing recognition was not the exclusive possession of professional foresters. It was held as strongly, and as patriotically, by the lumber industry, the third largest industry in the country, as by anyone else.

Looking at it purely from a self-interest viewpoint we see an industry employing some eighty thousand wage earners and with a capital investment of over $3,000,000,000,[1] facing across the years the simple question as to whether theirs was to be a continuing calling or vanish from the face of the earth because of a lack of raw material; facing also the fact that the time was not quite but almost at hand when it would be economically practicable definitely to engage in the growing of forests.

And, finally, the industry faced the fact that the forest policy which would have to be adopted in order to enable the country to be in what may be termed a continuing forest condition by the time the last of the virgin stumpage had gone would have to be a "pull-all-together" affair; and that that would mean one of two things—coöperation by all parties interested or compulsion. Naturally the industry was not unswayed by self-interest in taking note of these shadows of coming events, and in considering ways and means for adjusting itself—and its interests—to the changed order those events were seen to be bringing with them. It was nothing derogatory to its patriotism or its "public spirit" that it should have surveyed the future in this frame of mind or that, having so surveyed it, it should have concluded that it preferred coöperation to

[1] The following additional figures on the scope of the industry were given by the *Wall Street Journal* on June 3, 1924. Thirty thousand saw mills cut an annual average of thirty billion feet of lumber; though forty billion feet were cut in 1923 and forty-six billion in the peak year, 1907. The average per capita lumber consumption in the United States dropped from five hundred feet in 1907 to three hundred in 1924. Corresponding per capita averages for other countries are Germany, one hundred and fifty; England and France, each one hundred and twenty to one hundred and forty. Of the total American cut in 1923, fifteen billion feet were used by farmers, six billions by the railways—of which some two and one-half billion represented eighty-seven million five hundred hundred thousand ties, and one billion repair and construction of cars; and one billion feet by motor car manufacturers.

compulsion and proceeded to exert its influence to bring coöperation about.

Now the natural question to ask is why, in such a condition of affairs, there should be any occasion for difficulty. If the American people were coming frankly to recognize—as they were—that no matter how huge one's deposited forest principal may be, the drawing out and spending from that principal every day of a sum three to four times as great as the daily depositings, plus accumulating interest, meant the certain coming, soon or late, of a day of "no funds"; and if, in the light of that recognition, they were casting about for some method by which their forest affairs might, in a way of speaking, be budgeted; and if, that element among them having the most direct and practical concern in forest affairs recognized just as frankly as anyone else the approaching crisis and proposed a meeting of it by all in coöperation—why should there not have been coöperation without any ado?

The answer is that there were two viewpoints. One side stressed, the other soft-pedaled or ignored altogether the word "devastation." The said word, as extensively bandied about, had reference to the methods of cutting employed in logging operations on private timberlands. Those methods, the extremists maintained, constituted practically the entire forest problem. They were making reproduction impossible on logged-off areas, it was claimed, either by killing off the young growth in getting out the mature, or by leaving the land in such a state that it would be swept by frequent fires and all beginnings of reforestation destroyed. The thing to do was to control by drastic federal legislation all private cutting—save on farm wood lots.

Some of those who did not see eye to eye with this viewpoint denied the existence of devastation. Others conceded its existence, but maintained that its effect on the general situation was negligible. Still others held that while it was serious and should be checked, other reforms were needed more imperatively. They all differed with the extremists as to the matter of private regulation. In general it may be said that by the time the Forest Service had got around to the point of taking a direct and official hand in the movement, in 1919, the program for a policy had come to include the following questions:

1. Regulation of private cutting
2. Fire control
3. Taxation reform
4. Extension of research, particularly as regarded production and utilization
5. Extension of state-owned and federal-owned forests

Now on all of these questions, save the first, there was practical unanimity of opinion; but the first was the splitting rock. Should there be any regulation of private cutting, If so, who should do the regulating, the states or the federal government? Should the lumbermen be encouraged to coöperate with all other citizens to solve a problem that affected everyone? Or should they be told that it was not a question of what they were willing to do, or of what they could do economically, but of what they had to do? These were some of the questions asked. Out of the questioning and the arguing there developed the school of the coöperationists and the school of the compulsionists.

It must not be thought that all of the professional foresters were in one of these schools and everybody else in the other. There were plenty of foresters in both of them. Therefore, we shall let foresters do the talking for both of them.

First, let us hear the coöperationist school described by Forester No. 1 in "How Lumberman in Following Their Own Interests Have Served the Public."[8]

The author of this article, after some preliminary observations about the not insignificant part lumbering has played in the development of America, went on to say:

> Of course I know there is another side to all of this. . . . but the useful thing, I take it, oftentimes is to a certain extent to idealize. What I believe myself is that lumbermen have contributed a distinct and valuable element to what President Wilson has been calling the "spiritual capital" of this country.
>
> * * * *
>
> . . . I do not mean to disparage imagination constructively used or to discourage any man's genuine efforts to make the world better, but I do object to half-baked propaganda that sees only one set of facts, and I feel that reformers, like business men, ought to go carefully and hunt for all essentials.
>
> * * * *

[8] *Journal of Forestry*, Vol. XV, 271-89 (March, 1917).

. . . these woods on the American continent are for the use of the people. Of course we ought to be decent and appreciative in this use, and as honest men we will want future generations to share in the benefit; but use is the key for each generation as it goes along and in respect to the things it requires.

* * * *

. . . We have got to handle all the matters involved in accordance with our genius as a people—our knowledge, our training, and our capacity. Of that there may be much latent in us that will in time come out; in fact it looks as if such things were now developing. But what we have done well, what we know we can do, what in fact we are famous for among the peoples of the earth, is to manage things by way of individual enterprise and invention. This continent was conquered and civilized not under the direction of a despot or by a carefully planned system,[9] but through individual initiative, by the push and energy of a free people. The people led and government followed. When an opportunity has arisen or a gap has appeared, the usual course has been for the energy and invention of some man or group of men to step into it. . . . I think this push and energy of our people on the whole has been not only resultful, but pretty wise also. And believing that, one looks for adaptation to new conditions as well, though not necessarily with great rapidity. What ever, for instance, we ourselves have to urge in the way of collective effort or otherwise, will be measured, and ought to be measured, by that same wisdom.

* * * *

Not that I am going to claim perfection for our commercial, capitalistic system or for the lumber industry, but I ask you to consider broadly and fairly how utility and price on the one hand, and on the other completeness and intensification of use, have worked together, especially to consider how substitutes for lumber[10] have appeared in late years on the recent price levels, and then ask yourselves if, in the main, these economic forces are not sound and serviceable, if on the whole they have not greatly served this country, if in fact you really think that centralized, designed control could on the whole and up to date have provided us with any better system.

* * * *

. . . I consider the lumbermen of this country have rendered it a great service by not being stampeded by the idea of a timber famine.

[9] It were well for us to bear in mind, however, that efforts to conquer and civilize it in such fashion were made—without conspicuous success.

[10] In the course of his outburst in 1891, Gannett said: "If, by any chance, the supply should ever be exhausted, then we shall use something else: iron, paper, or it may be aluminum."

Some of them, perhaps, were; at any rate some used the idea for their own purposes. But the wise, cool, trustworthy men, though they said little, did not believe it. The bigness of the proposition appealed to them—the difficulty of sizing it up statistically; then they realized, in fact felt in their own persons oftentimes, the vigor and resource of a free people that I mentioned earlier as a factor in the whole situation.

* * * *

Nor can I omit touching the other aspect of the matter—the statistics and predictions. Lumbermen kept silent about them for the most part because, as interested parties, and in the minds of some under indictment, they could say nothing to effect. But others did take occasion at the time to make objection. . . . Dr. Fernow said he believed the figures untrue, and not only that, but dangerous if used as an argument.[11] . . .

I am not saying that there is no place for forestry in this country; I do not mean to imply either that we have more timber than we shall find a use for; nor do I greatly blame the men who in the critical times some years ago, to accomplish the big ends they were fighting for, used any weapon they could lay their hands on.[12] Quite the contrary, in fact, in regard to all of these matters. Of the essentials of forestry we shall certainly put in practice much more than we have as yet. I am saying that I think this will be done progressively, also that what we carry out for a long time to come will not be the forestry of the books altogether or even mainly, but that it will be free, new, United States forestry, guided for the most part by economic conditions. That seems to me inevitable; if so, it is important that the fact be clearly recognized; as far as I myself am concerned, I think the work will be all the more attractive because not exactly what we first conceived it.

A few broad considerations may make the point clearer. Let us, in the first place, reflect where the forestry that chiefly fills the books came from. It came over from Germany, the most auto-

[11] In this connection some remarks made by Fernow in 1886, the year he took charge of his "desk in an office," are interesting. "While for more than a century," said he, "alarmists have prophesied a dearth of timber, and by their clamor have induced more careful husbanding of forest resources in Europe, apparently their prophecies have not been fulfilled. But there can be no doubt that the conditions favorable for a fulfillment of such predicted danger are growing with the increase of the world's population and with the greater requirements of an advancing civilization. While in many cases wood is successfully supplanted by other materials yet the substitutes do not seem to come in proportion to the increased demand and decreased supply. There can be no doubt that wood is a *convenience* which ought to be preserved in sufficient quantity for the use of the human race." Department of Agriculture, Annual Report, 1886, p. 150.

[12] For example, some of the Weeks Act propaganda.

cratic country in the modern civilized world. Further, it started about a hundred years ago when that country was commercially isolated and shut in, by a people at that time set on the idea of national self-sufficiency and regulated order. How different our own circumstances and aspirations at the present time! We are between two oceans. We are commercially ambitious and expanding. South of us are countries hospitable to industrial development, and among others vast forest resources of certain kinds are there. North of us on our western border is British Columbia with a great forest resource and a people pressing it to development. Across the Pacific in northern Asia, are untouched forests of a reported vast extent. The world is small these days; its utilities are being searched out and through transportation put at the service of widely separated populations. We may regret this, think each country should be sufficient to itself, according to the German idea. I wont pass on that question, but I remember that twenty years ago this very year, when I first visited that country to see what I could learn from their forestry, I had the feeling that those Germans held too tight a rein over themselves for real men to thrive under; a lot of their practices seemed to me pedantic; and I will say this further in connection with events now transpiring [13] that I think we might ourselves have blown up before this time if we had no more varied, original and interesting work to do than that of a German forest officer.

* * * *

The term "regulation" has a different sound in the ears of an American. I think our people will go slow on this line, as slow as the necessities of the case permit, being especially suspicious of *any one who may manifest an evident desire to do the regulating.*[14] Let me, however, point to one or two things that show a progressive temper in our people. In Oregon the law since 1913 has required the private owner of timber to maintain a fire patrol deemed sufficient by the State authorities;[15] in New England public supervision is being gained over belts of lands along railroads and highways which, if uncared for, would constitute a fire menace. These provisions bear equally; they are broad, going to the source and establishing conditions essential to forest welfare; I think the temper of our people will support their extension. . . .

* * * *

[13] It is to be borne in mind that this address was delivered in 1916, less than two years after the tearing up of the "scrap of paper" and while the war was in full career.

[14] The italics are mine.

[15] The similar legislation which has since been enacted in Washington, the other half of "America's wood lot," has been referred to elsewhere.

In what has been presented I have been speaking, as I think, practically, of forestry as I look for it actually to come about in the United States. The picture in mind is of forestry, not a cult, or the possession of a group only, but a great enterprise of our people at large, entered on freely and with full understanding, in accordance with our genius and institutions, gaining gradually as occasion and necessity arise. In the end our forestry and our lumber industry will become one.[16] And before that time can be said to have arrived, the interests of the lumber industry will very often run parallel with those of the future and the public in these matters. That community of interest should be understood and utilized as one of the most potent practical forces.

I realize that many reflections inconsistent with these ideas must have been in your minds during the reading of this paper. I will take up one that I am sure has been there, . . .

The enormous waste of timber that occurred in the pineries of the Lake States, and the lamentable present condition of much of the land concerned has been laid up against the lumber industry and indeed against the Country's intelligence. The facts are admitted, but against them I will set up two considerations. First, if the Lake States lost native resources at least they became populous and wealthy in other things, while a still more noteworthy fact is that the Prairie and Plains States were built up more quickly and cheaply than we can conceive of their being built under any other system. That is, with its faults our system also had its advantages, and the nature of both is such that the question involved is social and governmental, not technical.

For the second offsetting consideration I shall take you to another region where the course of repair that a great and wealthy country like this can make, and will make when the times comes, is already to be seen in operation. And here conservationists, as these were represented at an important period and in respect to some very material matters, will in my judgment have to yield in wisdom to the popular and business instinct.

Twenty-four years ago, when I first took up forestry, a critical point was the treatment of the White Mountain forests. In New England at that time economic conditions had just got around to call heavily on those mountain forests for lumber and paper stock. Loggers were inventing new schemes for getting that timber, and business concerns were in there striping the spruce off clean as far as they could reach it. Nobody interfered in an effective way,

[16] Another forester has put it thus: "Where forestry is a fact it is not a thing distinct and opposed to use of the forest. It includes lumbering—indeed, is lumbering so conducted as to perpetuate itself. It begins with use and ends with use, for the purpose is to grow material that can profitably be cut, manufactured and used. The entire cycle must harmonize economically."

but there was a lot of reviling of those lumbermen. They were robbers; they were spoiling the scenery; they ought to stop or else cut conservatively. However people seemed glad to get the lumber and paper at lowest market prices.

The first relief came when the fact last mentioned was pointed out. Next a few men gained standing enough to convince people that if those lumbermen were going to cut those mountain slopes at all they ought to clear cut them; also that reproduction of tree growth was quick and abundant. Now for some years past we have been buying back these lands and putting them under protection and management. I will say for myself that I think in following this history these lands have served and fitted the life of this country better than they would under any other. From all except the scenic viewpoint, we are in ample time, for vast areas were not burnt or eroded, while all New England yet has large stocks of timber. *A main point is that when the time came we had the wealth, created in part from the natural resources of that very ground, to do what was necessary.*[17]

My purpose in this paper, whatever its effect may be, has not been destructive. I have, for one thing, for the economic forces in the field claimed general soundness and utility. Second, I have advocated opportunist, catch-as-catch-can forestry in the main as that which seems to fit our circumstances and people, and the kind that, frankly pursued, will yield most in the long run. I have also and especially spoken for recognition and cultivation of the country's lumbermen in the forestry movement—this in the first place because in the future as in the past the interests of these men will oftentimes run parallel with those of the people at large, a fact which should be understood and utilized; in the second because as that element among our people most familiar with the problems to be met, as the men whose interests are nearest and oftenest touched, and as containing among them a due proportion of high-minded and trustworthy citizens, their support and coöperation should be very serviceable for working out the problems of the future. . . .

* * * *

Further than that, I say with entire confidence that while many will be indifferent and some will watch merely to profit for themselves, still hundreds of right-minded, clear-thinking, trustworthy men connected with the industry will be ready with their influence, and their judgment too, to coöperate with measures that appeal to them as sound, timely, and well-planned.

Now the article from which this long quotation has been made was written, let it be repeated, by an American professional for-

[17] The italics are mine.

ester, and was delivered before the Society of American Foresters on February 10, 1916.[18]

For an exposition of the other side. There is an abundance of material to choose from. In the presence of such an embarrassment of riches it is a little difficult, ordinarily, to pick the real, outstanding representative of a point of view. Not so here. That because the author of "The Lines Are Drawn"[19] deserves the honor, no less by reason of the fact that his compulsionism was— and indeed still is—of what may unexaggeratedly be termed an "ultra-compulsating" complexion; than by reason of the further fact that his name in forestal affairs, was a name that was—and indeed still is—a name to do considerable conjuring with.

Let us give ear, then, to "The Lines" of Forester No. 2. Said he:

> The continued misuse of forest lands privately owned has now brought about a critical situation in America. . . . The situation demands action, not talk, and the only problem before us is to decide what form of action is best.
>
> I shall not review the facts for these are most excellently stated in the report of the committee for the Application of Forestry. . . . The gist of this report is that destructive lumbering on private timber lands is working a grave injury to the public interest and must be stopped. A plan to stop it is proposed . . . the legislation suggested is workable, comprehensive and fair.
>
> . . . I agree with the findings and recommendations from start to finish. These men have rendered a service to Forestry in America which will long be remembered.
>
> The fight to conserve the forest resources of our public domain has been won. The National Forests are now so firmly established and their management is so thoroughly approved by the public in general that any attempt to turn them over to private ownership would only result in extending the policy of public ownership.
>
> Another and a bigger fight has now begun. I use the word fight, because I mean precisely that. Forest devastation will not be stopped through persuasion, a method which has been thoroughly tried out for the past twenty years and has failed utterly. Since otherwise they will not do so, private owners of forest land must now be compelled to manage their properties in harmony with the public good.

[18] To illustrate his calibre—when a naval stores commission consisting of prominent members of the industry went abroad in July, 1924, to study turpentining methods in the French Landes and the turpentine orchards of Spain, he went with it as the representative of the Forest Service.

[19] *Journal of Forestry*, XVII, 899 (December, 1919).

Pressure from without, in the form of public sentiment, crystallized in compulsory, nationwide legislation, is the only method that promises adequate results. To apply this method sucessfully means to fight.

. . . The lumber industry as a whole is so constituted and inspired that a change from within is not to be expected.

. . . Every forester in the country must face a clear-cut issue. . . . He must actively support and fight for some plan aimed directly at the prevention of forest devastation on privately owned lands, if he is to call himself a forester in the finest sense of that fine word.

. . . The field is cleared for action and the lines are plainly drawn. He who is not for forestry is against it. . . .

There is a good deal more along this line, but enough has been quoted to indicate its real gist.

The committee bringing in the report that was thus so wholly commended was a committee of the Society of American Foresters,[20] which had been appointed by the president of the society for the purpose of devising a plan to arrest "forest devastation" about the early or middle part of 1919. It was styled the "Committe for the Application of Forestry." The report itself drew a most alarming picture of the forest situation, ascribed that situation to "devastation," indicated private lumbering methods therefor,

[20] The Society of American Foresters is the national professional organization in forestry corresponding to the American Bar Association, the American Medical Association, and similar professional groups. It had some eight hundred members in 1923. Many professional foresters, however, are not members. It was organized December 13, 1900, Pinchot and Fernow being among the charter members. Some associate members during its early years were Theodore Roosevelt, Grover Cleveland, Benjamin Harrison, James Wilson, and E. A. Hitchcock. Publication of its proceedings was begun in May, 1905, and was continued under the name "Proceedings of the Society of American Foresters" till January, 1917. In that month appeared the first issue of the "Journal of Forestry," representing an amalgamation of the "Proceedings" and the "Forestry Quarterly," which had been started by Fernow at Ithaca in 1902. The first issue of the Journal was Vol. XV, No. 1, it being thought advisable to retain the continuity of the Quarterly, the first real professional forestry organ in the field. The Journal is also a continuation of the eleven volumes of "Proceedings." It has continued to this day as the official organ of the society. One of the conditions of the transfer of the interests of the Quarterly to the new publication was the appointment of Fernow as Editor-in-Chief of the amalgamation organ "as long as he is willing to discharge these duties and as long as such action is consistent with the interests of the Society." Dr. Fernow served until his death in 1923. Beginning January, 1925, the Journal became a monthly publication.

and proposed a scheme of legislation that was nothing if not drastic. Under that scheme of legislation private lumbering on privately-owned land was to be, not merely controlled, but practically dictated by the national government acting through the Forest Service. State control was to be swept aside as inadequate to the situation. In sum and substance it was proposed to place in the hands of the Forest Service what amounted to absolute power over all the forestal affairs of the nation, private as well as public.[21] Not in so many words, not, probably, in the deliberate intent of its framers, but certainly for all practical purposes, the document would abolish the several states, and set up in their place one great central power with infinite possibilities.

The writer doubts that the American people are hankering after anything of this sort.

Of course the world marches and will continue to march. The radical innovation of to-day is oftentimes the conservative commonplace of to-morrow. But the to-morrows are not to be forced.

That fact has been recognized by no man better than by Forester Greeley, to whose views regarding local self-government in Alaska we have already referred. Let up quote him a bit more specifically on that point:

> The national forests cannot be run on bureaucratic lines. While their use must be governed by sound technical knowledge, it must equally meet and satisfy community needs and demands. The forest officer must be able to command the confidence as well as the respect of his local public in order to accomplish his task, and while applying the principles and maintaining the standards prescribed for him by his superiors, he must win approval and support for the undertaking in his hands or he will be the resident representative of a distant and impersonal bureaucracy which does not serve but rules. National forest administration must be a success on the ground and in the judgement of those who come into first-hand contact with it.[22]

Now in passing from the trumpet blast of Forester No. 2, it must be pointed out that the committee report which drew forth in his ringing "start-to-finish" Amen was not the product of an

[21] The report in full appears in the *Journal of Forestry*, XVII, 911-45 (December, 1919).

[22] Forester, Annual Report, 1923, p. 7.

absolutely unanimous drafting body. There were a couple of "mild reservationists," and their points of divergence from the general trend of the committee thought is worth noting.

One of them "heartily favored" the proposed legislation, but tempered his approval of the sentence with a good word for the condemned wretch. "It is my belief," said he, "that the lumber industry is not to be held responsible for existing conditions." The blame for this, he declared, lay upon the nation as a whole, and upon the land laws it had enacted; laws, the mild apologist declared, "from which the lumber industry as well as the public has suffered."[23]

The other dissentient was really rather more than a "mild reservationist." He was something of a radical one. He signed the report with the others, and then proceeded to object. All of his objections and proposed substitutions cannot be noted. The substance of the principal ones was—

1. Opposition to the abolishment of the states as forest control agencies.

2. Opposition to what was possibly not an intentional but was certainly an apparent effort in the report to "play to" labor and the farmer.[24]

The foregoing observations have had to do with the development of this movement on broad, general lines—as affecting the profession of forestry as a whole, the lumber industry as a whole, indeed, as affecting the Nation at large. This phase of the matter has been gone into at length because it constitutes a necessary foundation for a consideration of the part played in the movement by the Forest Service, a part which, as has already been noted, did not begin to display itself in definite and official action till 1919.

This is not to say that the Service was not interested in the movement prior to that year. With probably the bulk of American professional foresters included in its personnel—to say nothing of the

[23] He also advocated, in this connection, what Forester No. 1 had advocated—a working with the lumbermen in the forestry movement rather than a deliberate antagonizing of them.

[24] The report provided for the creation of machinery "for the adjustment of differences arising between labor, management, and the public." It provided also that the proposed legislation should not apply to the one hundred and sixty-five million acres of farmers' wood lots, which constitute about a third of the forest land of the country. That is, the farmer was to be allowed to go unscathed for that which the lumberman was to be punished.

basic reasons for the Service's very existence—it would have been out of accord with the fundamentals of human nature if the exact opposite had not been the case.

The action taken by the Forest Service in 1919 consisted of a speaking and writing crusade the burden of which was that private timber lands, which contained the great bulk of the country's remaining virgin stumpage were being cut in such a manner as to render doubtful, if not impossible, the coming-on of a second crop of trees. As a result a state of affairs was declared to be developing, possibly slowly but none the less surely, that a nation with its industrial well-being founded upon wood could not but view with concern. It was declared, in effect, the time was at hand when the nation, in the long-run interest of all its citizens, would have to take note of this developing situation, and either take action or induce action designed to meet it.

Forester Graves from the first rather stressed the matter of the regulation of private cutting. But he did not do so in the truculent tone reflected in the report of the " Committee for the Application of Forestry." He was frank but fair, standing firm for certain standards, but looking for their attainment through coöperation rather than compulsion.[25]

For example, in his first address of major importance on the subject, the one delivered before the convention of the National Lumber Manufacturers' Association, at Chicago, April 14, 1919, he declared that the transfer of timber lands to private ownership had been a grave error in public policy from the first; a pronouncement that, considering all the circumstances, certainly did not err on the side of timidity. But in the same address when he had got " down to cases " upon the practical question of what to do he said:

As I see it, either private owners must assume the full responsibility of properly caring for their timberlands, including protection and forest renewal; or the public must take over the responsibility that it had and surrendered; or the public must share with the owners both the responsibility and the burden of securing the objectives that are essential to safeguard the public welfare. My own view is that the last is the only fair and practical method.

[25] The gist of Mr. Graves' views were published in December, 1919, in Department of Agriculture Circular No. 148.

And in his report for that year he definitely aligned the Forest Service on the side of coöperation by saying:

The proposed plan for realizing these objectives contemplates co-operation between the Federal Government and the States. The Government and the States must join hands in working out a program that will bring into correlation the various public and private efforts for the protection and right handling of forests.

He had himself taken a practical step in that direction before those words were written by inaugurating a series of conferences with the lumber manufacturers, the wood pulp interests, timberland owners and others, who, by reason of a practical and work-a-day contract with the forests, occupied what we may call the front line of the national forestal concern.

The first step was taken at that convention of the National Lumber Manufacturers' Association just alluded to. At the conclusion of Colonel Graves' address, he was asked by the president of the association if he would care to have a committee of lumbermen and timber owners work with him in the formulation of a forest policy. To that tender of coöperation he replied

That is exactly what I had in mind. As I say, I have taken this thing up in all parts of the country, with the different agencies, state and national. We cannot reach this proposition by any fiat, or any single federal law of any sort; because this thing is so far-reaching, and there is such a variety of conditions in the country, that it is going to require state legislation, as well as federal legislation, and it has got to be worked out with a consideration of local conditions. I have already taken the matter up with different state forest agencies and other organizations, and I should like to see all the forest organizations and institutions and groups of men interested in this, with some point of contact, so that they can present their suggestions and help altogether to work this thing out.

The first conference of the campaign was held, accordingly, in Washington about a month after the Chicago convention, and definite organized work for the desired end was at last actually under way, with the Forest Service officially committed to the coöperative idea.

This first conference was held on May 20. It was just about this time, be it remembered, that the president of the Society of American Foresters was assembling that "Committee for the Application of

Forestry," composed, as he put it, of "the keenest minds at the Society's disposal," of whose mild and conservative report we have hitherto read in "The Lines are Drawn." [26]

Naturally the clashing of such violently opposed viewpoints is a circumstance of doubtful benefit to an endeavor to reconcile differing interests into a working together by way of mutual concession and forbearance. There is always the danger that somebody will get insulted and bolt the convention. That this did not happen in the early stages of this final effort to set coöperation going, must be ascribed to the fact that the two schools were not set off from one another by strict professional and occupational bounds. Had the affair been one between nothing but the lumber interests on the one hand and nothing but foresters on the other, it would have been hopeless. That it was not such an affair Forest No. 1 has already told us. The point is worth rubbing in here with a little more professional testimony.

The situation was disturbed in March, 1919, by the president of the Society of American Foresters, and again in May of the same year, with a couple of articles in the Society's publication [27] that were not exactly calculated to put men making their living in forest industries in a particularly coöperating or concession-making frame of mind. With the outcry emanating from lumbermen over these utterances we need not concern ourselves.[28] But it will be worthwhile to look at the reaction to those articles of a brother forester, and an eminent one; a graduate of a leading American forest school, who had also studied in the best schools abroad, and a member in good standing of the Society.

Said this forester—whom we shall style Forester No. 3:

. . . The inspiration for this plea or the personal views as expressed are unimportant compared with the question of whether the elective head of the Society is correctly setting forth the views of the profession as a whole. This assumed function of spokesman assumes still broader significance after observing the effect of

[26] The report was submitted to the President of the Society of American Foresters, November 1, 1919, by the chairman, the author of "The Lines." It was published—together with "The Lines"—in the *Journal of Forestry* for December, 1919.

[27] *Journal of Forestry*, XVII, 3, 227; XVII, 5, 471.

[28] The reader desiring a sample, however, can find it at p. 23, *et seq.*, of the *Lumber World Review* for June 10, 1919.

another recent dissertation by the same author on the old-school theme of the wickedness and incompetence of the lumber industry.

* * * *

This assumes to throw all foresters into one class. It is fortunate they are not. . . .; Only a minority are still thinking about an American forest practice of the kind seen in travelling through Central European forests.

* * * *

But why introduce such a pugnacious attitude into a situation that calls for harmony and coöperation? Mr. Graves, in outlining his ideas for a national forest policy has touched on Government control of private cutting, but in a way that invites coöperation and encourages helpful discussion. The private timberland owners, whose holdings are represented as the key to the situation, are not up in arms and are not likely to be as long as sanity prevails. The resentment implied, if not expressed, in the . . . recent articles . . . seems to be toward the failure of the private owners to keep their land productive. If Mr. ————, or any other radical forest policy advocate, had his capital invested in timber in any given region, or was responsible as trustee for funds so invested, would he do any different from the owners he criticises? Or would he in the past have kept his lands producing forest crops at the cost of dissipating his capital or making it unproductive? The economics of the case do not respond to theory, as various "working plans" have fully proven, and those without financial interests in the forests find it easy to criticize those who own timber.

A plea for mental adjustment seems timely. . . . The big thing is to work together through coördination of the profession and co-operation with the industry. Intolerance and innuendo will never formulate policies nor bring about their application.[29]

The reader will have gathered by this time that "The Lines are Drawn" did "say something." There were in truth very definite lines, and by late 1919 they were coming to be very definitely drawn. Foresters there were who refused to see in that call to arms the perfect ideal of forester in "the finest sense of that fine word;" preferring instead to pick out their own ideals, rather than have them selected for them by a committee.

With the alignment of the forces thus sketched out it only remains to review the major marchings and counter marchings that took place before the final compromise was arrived at.

[29] *Journal of Forestry*, XVII, 7, 771.

Rather in the nature of a range-finding shot was the introduction of a bill by Senator Poindexter on December 12, 1919,[30] proposing the spending of $1,000,000 by the Secretary of Agriculture for a comprehensive survey of the pulp wood situation in the United States, including the creation of plans for the reforestation of pulp wood lands, and for the assuring to the country of a sufficient supply of newsprint.[31] In ordinary times such a proposal might have got somewhere. But at such a time the chances were necessarily slim. It died in committee.

Two months later, however, a more inclusive senatorial gesture was proposed by Capper of Kansas that went through to definite accomplishment. To be sure it was only a resolution [32] calling upon the Forest Service for certain information, but it was, nevertheless, one of the noteworthy moves of the policy campaign. This not only because of its going to every phase of the problem; but because of the obvious facts that it derived its inspiration in great measure from that report upon which we have hitherto seen the accolade bestowed in "The Lines are Drawn."

[30] 66 Cong. 2 sess., S. 3555.

[31] The enormous development of the paper-making industry in the United States, due almost entirely to the use of wood as a raw material and the application of power thereto, has probably done more to demolish the old belief in "inexhaustible resources" within the past half century than any other one thing. This largely by reason of the spectacular nature of the contrasts, facts, and figures which the growth of the industry presents. Such things as, for example, the fact that one Sunday edition of our newspapers eats up over ten acres of spruce trees. Or the fact that two hundred paper mills with an output of three thousand tons of paper in 1810 had grown to something over seven hundred with an output of seven million three hundred thirty-five thousand tons in 1920. Into the making of that latter tonnage there went something more than four million tons of wood pulp, or about six million cords of wood. In 1870 about which time wood first began to be used in American paper making two thousand cords were used. But perhaps the most impressive illustration of the change that has taken place is furnished by the contrast between population growth and paper production growth between 1810 and 1920. The first is to the second as fifteen is to twenty-four hundred. One need only bear in mind in this connection that the enormous bulk of the paper development has occurred since 1870—or since wood began to be used—to get the true significance of that startling ratio. The reader desiring detailed statistics on this phase of the American forest problem, together with an interesting résumé of its past and present and an equally interesting speculation as to its future is referred to Agricultural Department Bulletin No. 1241, "How the United States Can Meet Its Present and Future Pulp-Wood Requirements," published July 29, 1924.

[32] 66 Cong. 2 sess., S. Res. 311, February 21, 1920.

The resolution requested, in substance, a reporting by the Secretary of Agriculture, not later than June 1, 1920, upon timber and pulp wood depletion, the connection of the same, if any, with the high cost of forest products, with the alleged increase in the concentration of timber ownership, and with the state of the public welfare in general. Information was also requested as to the alleged jeopardizing of domestic industries by the export of forest products. Only immediately available or readily obtainable information was to be used, quick action being inferentially desired.

Before this action could be had, *i. e.*, within something less than four months, events of importance transpired, both within the Service and in the legislative field.

First of all came the resignation of Colonel Graves from the Forestership on March 9, within three weeks of the introduction of the Capper resolution. Colonel William B. Greeley was named as his successor five days later, and formally took over the office on May first. The reasons assigned by Colonel Graves for his resignation were a desire for rest after ten years of somewhat arduous public service and the necessity which advancing years entailed of seeking a somewhat better emolument than government service afforded.

Although it is rather an interesting fact that Colonel Graves came in one storm and left in the beginning of what was prognosticated as another,[33] there is probably no significance about this change beyond the fact that it marked the definite termination of the American forestal period with European influences and the beginning of a new period in which those influences were on the wane. Colonel Graves, it will be recalled, had been the second American student of forestry, had got his professional training in Europe in the days before American forest schools existed, and had brought to his direction of the Forest Service in consequence at least a tinge of European forest opinion. His successor's training was entirely American. He was one of the early crop of American forest school graduates and had gone directly from school to some fifteen years of practical, first-hand experience of forestal problems in the national forests of the West.

[33] That is, he came in 1910 in the midst of the Ballinger-Pinchot controversy, and left in 1920 just as Forester No. 2 was summoning the faithful for a "fight."

The second event transpiring before the Forest Service could respond to the Capper resolution was the appearance, on May 20, less than three weeks after the first all-American forester took office, of the entire program of the "Committee for the Application for Forestry" in the shape of a definite legislative proposal.[34] Capper, of Kansas, was again the "moving" spirit.

As this Capper bill is the first of several which we shall have to notice and as it is the most radical of a series whose radicalism shows signs of mellowing each successive step, it will be worth while to take note of the things it proposed to bring about.

By and large, as has been said, the bill was the report of the "Committee for the Application of Forestry" translated into legislative phaseology. Its title reads as follows: "To prevent the devastation of forest lands, to perpetuate the forest resources of the United States, to avert the destruction of the lumber and wood-using industries and for other purposes." Then follows a long series of wherases, the final one reading: "Whereas the devastation of privately-owned commercial forest lands is chiefly responsible for these conditions and can be prevented." . . .

The bill then proceeds to provide for a "Federal Forest Commission" to be composed of the Secretaries of Agriculture and Labor and the chairman of the Federal Trade Commission. In this proposed new commission was to rest, through the instrumentality of the Forest Service, the execution of the new law. And this execution, be it noted, was to be direct. States and their police powers, and constitutional guaranties were disregarded. The commission was to make its rules about private cutting, protection, etc., and then enforce them when, where, and how it pleased.[35] It could exempt the lands of what it considered good lumbermen at pleasure, but it could also, at pleasure, remove the exemption. Through the instrumentality of the Federal Trade Commission it was to concern itself with the inmost of business affairs of every lumberman in the land. It was conceded, however, that the reports which it was to bring forth from time to time were to be "confidential as to persons." It was to have the right to permit combinations of lumbermen as it saw fit; to engage in lumbering on its own in the national

[34] 66 Cong. 2 sess., S. 4424.

[35] Except as regarded farm wood lots, which were specifically exempted from the provisions of the proposed law.

forests; to inspect the records of any and all government departments in matters pertaining to the commission's functions. For the recalcitrant, good, round, thumping penalties were provided.

There was, as has been said, more than a little of the ring of "The Lines are Drawn" and accompanying documents about this unique proposal. So much so, indeed, as to impel one to remark that while the voice may be the voice of a senator, the hand was the hand of Forester No. 2.

Something over a week after the radicals came out into the open, the Forest Service brought forward, as per instructions of the earlier Capper effort, its seventy-page "Report on Senate Resolution 311," covering "Timber Depletion, Lumber Prices, Lumber Exports, and Concentration of Timber Ownership." This was done with the explanation that the work could not be considered as in any sense complete or thorough, being based merely on what data were readily available. A genuinely exhaustive report, it was stated, would require two years' work at least. Such a thorough survey was strongly recommended.

The gist of the report consisted in the pointing-out that of the original forest areas of America two-thirds had been culled, cut over, or burnt; that of the original stand of timber three-fifths had been used up; that counting in the losses caused by fires, insects, and diseases there was an annual drain from the forests of twenty-six billion cubic feet, as against an annual increase of some six billion cubic feet.

That feature of the report, however, about which its real argument may be said to have been built, had to do with that same old matter of "accessibility," which, as we have seen hitherto, had been a matter not devoid of economic significance even in the days of the "irritated woodsmen." The report drew attention to the fact that although there still remained in the United States a stand of timber far from unimpressive in totality of area covered and board feet contained, it was not located conveniently with regard to the bulk of population, of agriculture, and of manufacturing. Some 60 per cent of it was concentrated west of the Great Plains where it was not needed. With the progressive "cutting-out" of the remaining 40 per cent, that part of the country containing the greater number of people and the larger investment in industry was constantly growing more and more dependent upon the Pacific Coast. The

distance between saw mill and home builder was constantly widening, and was constantly increasing the length of lumber haul and the stiffness of lumber freight bills.[36]

At the base of the whole problem, the report maintained, was the great area of land fit for nothing but the growing of forests which was producing either not enough or not at all. There were something like three hundred twenty-five million acres of cut-over land containing no saw timber, of which some eighty million acres were absolutely unproductive, having been swept by fires so repeatedly that all reproduction and natural possibility thereof had been utterly destroyed. The unproductive area was said to be increasing at the rate of three to four million acres yearly.

As to the concentration of timber ownership and the menace of monopoly the report stated that "the tendency toward the acquisition and speculative holding of timber beyond operating requirements had been checked";[37] and that "no information is at hand which would justify a conclusion that monopolistic conditions on any general scale have grown out of this situation." It was pointed out, however, that with the continuation of timber depletion the degree of control by a few interests of the remaining high grade timber of the country "approaching a natural monopoly in character" was bound to become intensified.

As to lumber export the report saw little imminent danger to domestic industries so far as the softwoods were concerned, but did see a threat of danger as to the hardwoods needed by certain

[36] This interpretation of the timber situation is verified by the following excerpt from the business and financial section of the *Philadelphia Public Ledger*. On August 12, 1922, the regular Seattle financial dispatch of that paper in commenting upon the then state of the lumber market said:

"Although the fact is not yet plain to Eastern buyers, fir lumber may never again sell as low as at present. Timber values have increased visibly, as shown by the June sales of State timberlands. Logging costs have increased, as it is necessary to go back farther from tidewater and to build expensive railways for many miles in order to get logs to the booming grounds at the mills. Log prices for several months have held very strong, labor is high, and buyers who look for the occasional lean months of fir lumber history will, in the opinion of operators, be disappointed.

"Competition from Southern pine is becoming of less potency because of slow but steady reduction in the number of essential sizes that district can furnish."

[37] Agreeing therein, it will be noted, with the conclusions of the forester of the Western Forestry and Conservation Association quoted above.

of our "key" industries, which, even without any exports, were facing, it was declared, a serious shortage of raw material. Regulation of lumber export, therefore, if it were to be attempted should discriminate, it was argued, between grades and products, and bear down hardest on those in which shortages were most imminent and most menacing to domestic industries.

In concluding his letter of transmittal accompanying the report, Secretary Meredith urged legislation: "First, which will permit effective coöperation between the Federal Government and the several States in preventing forest fires and in growing timber on cut-over lands; and, second, which will greatly extend the National forests." These steps, he said, were the foundation of an effective national policy for insuring a permanent and adequate supply of timber.

In a word, coöperation, not compulsion, was declared, to be the remedy. That viewpoint was reiterated by the Secretary in his report for that same year,[38] in which he emphasized the need for national coördination of effort, and declared that the problem could be solved neither by piecemeal handling by uncorrellated local agencies nor by inflexible exterior systems imposed without regard to local conditions. Governmental effort should consist largely of the standardization and leading of state effort. The police powers of the states should be depended upon for the suppression of fires and the prevention of private devastation; a view concurred in by the new Forester in the same report in the declaration that the "speediest, surest, and most equitable action" was to be secured through dependence upon the police powers of the several states for necessary enforcement of needed requirements.

All in all, a report representing a far cry from first the Capper resolution, opening up possibilities for federalistic uproar and then the Capper bill, with its triumvirate of forest commissars.

Right at this point with this initial bit of manœuvering for a policy, and its outcome, in mind, it will not be altogether unilluminating to turn backward for some thirty years and look at an extract from an article on the forest policy of Switzerland which, when Dr. Fernow's forestry bureau was reluctantly trying to make rain, and enthusiastically making forest history by the practical

[38] Department of Agriculture, Annual Report, 1920, p. 46.

political method, had appeared in one of our earliest forestry magazines. In the extract quoted the author of the article begins by himself quoting, with approval, from one Professor Landolt, as follows:

Our forest laws are intended to work more through instruction, good example, and encouragement than by severe regulations. This method is somewhat slower than one which should involve more drastic measures, but the results achieved are more useful and lasting. When forest proprietors do something because they are convinced of its utility, it is done well and with an eye to the future; but what they do under compulsion is done carelessly and neglected at the first opportunity. What they have come to learn in this way, and have recognized as good, will be carried out, and that better and better from year to year.

So much for the author's quotation. Note now his comment upon the same:

This homely statement of the great Swiss forester is full of the wise moderation of a man conscious of the dignity of his work. Successful forest reform, here as there, must be a growth from the education of the people, finding its expression in laws which respect both the needs of the forest and the needs of the people, and which waste no time in mistakes. Such legislation is respected because it is capable of being enforced. The results of it are so large, it is so surely a part of the future, that the friends of forestry in America ought to work for it with the steady vigor of men who know they are going to win.[39]

The author of this tribute to moderation and coöperation? He was the same person who thirty years later, as Forester No. 2, declaimed so ringingly that "The field is cleared for action and the lines are plainly drawn."

The addresses and conferences which Colonel Graves had had about the country had not been without their effect upon the large forest interests, which one and all gave the question of what to do their serious consideration by appointing committees for the study of proposals and for conferences with others interested. One of the more prominent of these special bodies, the conservation committee of the American Paper and Pulp Association, requested the new Forester, shortly after he had taken office, to put his ideas upon

[39] *Forest Leaves*, Vol. III, No. 11 (October, 1892).

"policy" into concrete form and present them for consideration to the various lumber, timber, and wood-using interests. As a result a coöperational proposition was whipped together and submitted to every legitimately interested organization in the country for discussion, and, if possible, the threshing-out of some common basis for getting-together. Out of the parleying that resulted there was evolved by the fall of 1920 a sort of a committee of committees known as the National Forestry Program Committee, composed of representatives of the Western Forestry and Conservation Association, the Society for the Protection of New Hampshire Forests, the American Newspaper Publishers' Association, the National Lumber Manufacturers' Association, the American Paper and Pulp Association, the Association of Wood Using Industries, the American Forestry Association, and the National Wholesale Lumber Dealers' Association. This committee took general charge of the drafting of legislation embodying the coöperational idea, and at a meeting in New York City, on October 15, 1920, participated in by all its constituent elements, as well as by representatives of several other similar organizations, and by Colonel Greeley, who, by request, "sat in" for the Forest Service, the final draft was made of the bill that was introduced, December 22, by Representative Snell of New York;[40] a bill representing, it is said, the first concrete agreement by landowner, producer, consumer, and the Forest Service upon basic principles for a law to bring about a national forestry policy.

The staff work of the forestry program committee seems to have been excellent. In little more than a month after the introduction of the Snell bill, which is to say on January 26 and 27, 1921, the House Committee on Agriculture held hearings and learned at first hand about the quality of and reasons for its support and its opposition. It was realized by all concerned that it would be impossible, in the short time intervening between the hearings and the passing out of existence of the Sixty-sixth Congress on the fourth of March following, actually to get any concrete legislation on the subject. It was believed, nevertheless, that the educational importance of getting the matter before the committee and the country justified the proceedings.

[40] 66 Cong. 3 sess., H. R. 15327.

Before touching upon the hearings themselves it will be well to glance at the proposed legislation they were held to consider. The bill aimed

to provide through coöperation between the Federal Government, the States, and owners of timberlands for adequate protection against forest fires, for reforestation of denuded lands, for obtaining essential information in regard to timber and timberlands, for extension of the national forests, and for other purposes, all essential to continuous forest production on lands entirely suitable therefore.

Disregarding for a moment its first two sections the bill provided for a thorough, nationwide, forest survey that would provide data with a smaller percentage of speculation than that contained in all the estimates which had theretofore been made. It provided for a great extension of forest research and investigation, including studies in cutting and reforestation and in the effect of local taxing methods upon forest perpetuation. It provided for a great increase in forest purchasing under the Weeks Act, and for a widening of the provisions of that act that would admit of forest purchase anywhere in the continental United States, and of areas the control of which would not necessarily promote stream navigability. It provided for the swapping of national forest lands and timber for private lands held within the exterior boundaries of national forests—in order to consolidate the national holdings.[41] Finally, it made provision, under certain restrictions, for the incorporation into the national forest system, of practically every form of federally owned land in the United States, except national parks, that might be ascertained to be valuable chiefly for the growing of forests or the protection of watersheds.

About all of these proposals there was no conflict of opinion. Sections 1 and 2 of the bill held the rub. Stated somewhat broadly, but with essential accuracy, those two sections simply enlarged the fire protection coöperation sections of the Weeks Act to an extent that would enable the federal government, acting through the Secretary of Agriculture and the Forest Service, to prescribe, for each forest region of the United States, "the essential requirements"

[41] A proposal which, as we have already learned, was later made the subject of a separate law in the act of March 20, 1922 (42 Stat. L., 465).

. . . "where, and to the extent necessary, in the cutting and removal of timber crops, by such methods as will promote continuous production of timber, on lands chiefly suitable therefor." This prescription was to be given force by the familiar dollar-matching method we have already encountered in the Weeks Act and the highway legislation. That is to say, states which would coöperate were to receive federal subventions equal to the amounts they would severally put up. Nonconforming states were to get nothing.

Now it is true that these sections did not make the matter of the restriction of harvesting paramount. Cutting was not the only thing to be prescribed. Fire prevention and control was clearly recognized as the thing of principal importance. Nevertheless, there was the principle of the thing clearly stated, and it was certainly a far cry from the old, free days of the Dismal and the Manistee and the *cheniers* of Captain Hughes. Sugar-coat the thing as one might, it represented a degree of federal control of private effort, a tightening the grip of Order, that was a long step—forward or backward, depending upon the point of view.

Yet it was not apparently viewed with alarm by the interests most directly affected. For example, the committee was told by the representative of the Western Forestry and Conservation Association and the National Lumber Manufacturers' Association that the lumber industry was "not afraid of such a process." Continuing, he said

> The American People have always been fair when they have known all the facts. Given means by which these can be arrived at, with all sides heard, and with correllation by competent, impartial Federal agency, and the general principles of a just and effective national policy will certainly be determined. Given also means by which they are localized, because forestry is a local matter very largely, in the same democratic manner, and as suited to the needs and conditions of each forest region, and the application is not going to be impracticable, and we are not afraid of it.
>
> It seems to us the bill does exactly this thing. We believe that when all the facts are known and the maximum of voluntary participation is inspired, it will be found that our forest problem is in the main solved. But if any regulatory steps are necessary to assure equitable participation by lumbermen in this movement, then we must expect them to be taken. We think they will be more fairly taken and with less danger of ignorance, or prejudice, or injustice than under any alternate system of which we can conceive,

either leaving the subject to uncorrelated State action or attempting control by the Government without recognizing that we still remain under the possibly conflicting authority of the State.

And elsewhere in the same statement occurs the following statement:

Speaking on behalf of the forest industry, the main thing I want to impress upon you is that as far as it has a collective voice, authorized by all its organizations, it goes all the way in these two statements: First, it believes that this country should have such a national forest policy as this bill contemplates, and, second, that it expects to do its share to make the policy successful. We are for this forestry movement notwithstanding that we realize fully it may to some extent restrict individual independence for the common good. All we ask is that it be worked out in the most practical way, with all concerned sharing equally without discrimination, and with our industry treated as a coöperating ally and not as an enemy.

Later, after speaking of the uncertainty of the ultimate proportion of forest management as between public and private agencies, he said:

I do not see how sentiment or legislation could make private effort engage in producing an ample timber supply regardless of inclination, ability, or profit, any more than they can compel it to mine gold enough to make us all rich. The effectiveness of public effort lies rather in: First, bringing about the maximum of permanent private effort that has a sound basis to sustain interest and success; and, second, in preventing unnecessary destruction of the producing capacity of the residue lands which the public itself must acquire. In large measure both of these objects require a public policy of encouragement rather than punitive steps.

Again, after pointing out the obviousness that Schoepf had pointed out over a century earlier and Fernow within living memory—that private interest in forestry would not become great so long as abundant virgin timber supplies remained—he said:

The significant fact is that this Country has now just about reached the stage—some portions of it have and many lumbermen realize it—when stumpage values show it is profitable to grow timber if the cost and risk are not excessive because of fire hazard and confiscatory taxation. This situation is worth more to forestry than any amount of interest in the past when it would not have

repaid the effort, and more than any amount of artificial regulation that could now be devised. It wipes off the slate most of the old controversies, when foresters could not see why lumbermen did not listen to them and when lumbermen did not see why they should. It is now time to talk about forest growing. The very shortage which frightens us is the one thing to accomplish its remedy.

And finally the following:

Now you must pardon me if I seem to wander from this bill into the field of forest economics. I do so only to contribute the lumberman's viewpoint so that you may judge the effect upon him of this bill or any bill, and of the sincerity of his interest in it. He sums it all up about as follows: Forest growing is a business at best of slow and small returns which appeals little except as a means of insuring raw material affording a legitimate profit through manufacture. Hence he sees it confined as a private business to favorable areas, tributary to a permanent manufacturing business. Thus he sees it dependent also on economic soundness in the entire lumber industry based on service to the community which is recognized as useful, not destructive, and entitled to a return neither greater nor less than that justly accorded other forms of endeavor. Otherwise, he would be foolish not to abandon it.

Next as a matter of common sense and solvency he thinks forest growing must have reasonable protection of the investment against loss by fire, and that, as in all countries where forestry is practiced, taxation of the crop for so long a period must not be uncertain and confiscatory. As a rule he has not these assurances and cannot provide them for himself. They require State legislation and public support.

Finally, he senses that public interest in the land he cannot afford to keep will inspire some effort to regulate the condition in which he leaves it. He feels that this involves difficult questions that should be solved competently, and not in ignorance or prejudice, and that conditions seem to be lacking for solving them competently. In other words we have no policy.

Thus we have a set of what we might call essential conditions which must be provided by the public but which have not as yet been provided. One reason, perhaps, is that the public lacks assurance that advantage will not be taken of it by the selfish lumbermen with no reciprocal benefits of forest perpetuation. It should not be difficult to provide this but unfortunately there is a tendency to magnify the difficulty. Ill-informed advisers on both sides have contributed to this, arguing an inherent hostility between private and public interest, resulting, on the one hand, in demand for punitive regulation of the industry which disregards entirely its

governing economic conditions and, on the other, an unreasoning opposition to any regulation because impossible forms have been discussed.

Such a deadlock is vicious in theory and effect. There can be no solution based on a warfare which disregards either interest. No sane community would place impracticable restrictions upon one of its chief sustaining industries and the very one required to convert into usuable form the particular resource at issue. No sane industry would willingly destroy its source of raw material or defy public interest and power which can penalize it in countless ways. In all essentials, if not in all determined details of method the interest in forest perpetuation is absolutely mutual. The first of these essentials is constructive coöperation.

Now Forester No. 2 attended those hearings as the sole opponent of the bill, and he followed upon the stand, incidentally, the gentleman from whose testimony the immediately preceding quotations have been culled. Both of them had been professional forest men for many years. Time had been, in the days when Forester No. 2 had been The Forester, when he had recommended the other for the position of State Forester of California. And now here they were facing each other.

He began his story with a conjuring up of some of the dragons of the past. He told yet again of those enormous concentrations of forest ownership in the West and of the fraud with which they reeked. He also told again the tale of the forest land which had been acquired in Oregon as swamp land by going over it in a boat—in a wagon. But he did not tell of the not inconsiderable connection between these incidents and American development and American thought—along " irritated woodsmen " lines. He recognized, he said, " the very great ability of the statement made by the gentleman who preceded me." But, he continued,

I want to call attention to this fact, that here are these lumbermen coming before you and asking to be controlled. These are the men who have made their money by the detruction of the timberlands and who have already destroyed in this country and reduced to desert conditions an area larger than the forests of Europe excluding Russia. . . . They are here now asking to be prevented from doing that which has made them powerful and rich. . . . The point I wish to leave behind is this, that, as a matter of fact, this is not a bill to establish control over the lumbering industry of the United States in the interest of preventing monopoly, but it is

a bill which if passed will, in my judgment, be the most effective step that could be taken at this time to consolidate the monopoly over the lumber supply of the United States into the hands of a little group of men on the Pacific Coast. . . . It is the same old contest under a different name. It is the fight we had with the water-power men, oil men, and the coal men.

There! The word was out at last. There was to be a "fight." Without a "fight" there was no solution of the problem, no possibility of the creation of a policy.

Let us turn here for a moment to that part of the testimony of The Forester before the committee dealing with the proposals of the other wing. It will be recalled that he had participated in the preliminary and final drafting of the Snell bill as the representative of the Forest Service. He explained the coöperative features of that piece of proposed legislation, laying particular emphasis upon its fire prevention features, and pointing out that while the private owner had a direct interest in the protection of his own property, and should unquestionably contribute to that protection in proportion to his interest, he could not in equity be expected to assume the burden of overcoming the fire hazard created by the entire community. From 12 to 25 per cent of the burden of fire protection on privately-owned forests should be borne, he said, by the federal government, the balance by the state and by the private owners.

With the principle of direct federal control of privately-owned forests, he declared himself to have no quarrel. But in the practical difficulties lying in the way of the application of such control as the Capper bill contemplated, he professed to see insuperable obstacles. Speaking along these lines, he said:

Aside from the fact that the greater preponderance of legal opinion is that such Federal regulation of private property and industry would be in violation of the Constitution, aside from the difficulty or impossibility of inducing the American people to accept such an exercise of Federal authority over private property and industry, such a plan in my judgment will not work, because it does not fit the practical conditions of the case.

The first requisite for growing timber is the protection of forest lands from fire. That involves the exercise of the police powers of the State or country in a dozen different directions, ranging from spark arresters on locomotives to incendiarism. A second requisite for growing timber is some form of taxation which does not eat up

the value of the crop while it is being grown.[42] This rests with the local taxing powers of the State in which the land is located. Tax adjustments designed to secure the growing of timber should not be shared by any landowner unless he actually does grow timber; in other words specific requirements in reforestation must be met by the owner of the land in order to gain the benefit of special taxation.

Regulation of the manner in which forest lands are cut cannot be separated from the regulation of how forest lands shall be taxed nor from regulation of how forest lands shall be protected from fire. All three of these go together in actually bringing reforestation about. It is inconceivable that the Federal Government would take over the police powers of the States whose exercise is essential to the prevention of forest fires. It is inconceivable that the Federal Government will take over the taxing powers and functions of the States. But unless these two things are done it is not possible in my judgment for the Federal Government to regulate how forest lands shall be cut. To split up the one task between different public agencies would lead to duplication of responsibility and confusion. Either the Federal Government or the State must deal with the private timber owner in all the phases of timber production on his land.

The degree of regulation that is equitable in consideration of the local fire hazard, the local tax conditions, and local economic conditions must be worked out by some public agency which controls all of these factors as far as they are within public control. Since it is not possible for the Federal Government to take over the whole job, the Federal Government should leave the States to deal with the private forest owner.

There is no question that our several States have ample police power to regulate the use and protection of forest land. In many

[42] The question of how to tax forests has concerned foresters and economists for years, and little if any tangible progress toward its solution has yet been made. This, too, despite the fact that it is universally conceded to be next in importance, in the general forest problem, to the fire suppression question. Such outstanding authorities as Fernow and Professor Fairchild of Yale have been anything but cocksure upon the matter (Fernow, Taxation of woodlands, *Forestry Quarterly*, V, 377; Fairchild, Forest taxation, 60 Cong., S. doc. 676, pp. 581-632). Constitutional limitations in the states, the danger of disrupting local revenues upon which large political units depend, and the fact that excessive taxation militates strongly against forest growing are only a few, though they are perhaps the most important, of the puzzling angles the question presents. The latest extensive investigation of the question was that made by a sub-committee of a committee appointed by the Chamber of Commerce of the United States in 1921 to investigate the entire question of a national forestry policy. This committee published a booklet giving a résumé of the forest taxation situation in the several states.

instances that power has already been exercised by the States. If the Federal Government should now attempt to regulate forest lands an inevitable conflict between State and Federal requirements would ensue. We would face the prospect of two sets of regulations enforced by two sets of officials upon the same forest owners and not necessarily in agreement. I do not believe that this is the practical way to get results.

* * * *

I am satisfied that a policy of coöperation represents the most effective way by which the Federal Government can bring about the growing of timber on private forest lands.

* * * *

After careful study of the whole subject for several years, with discussion embracing practically every region and group of people interested in timber production, and after the experience of the Forest Service in coöperation with States for nine years, I am satisfied that the first two sections of the bill now before this committee . . . represent the most effective step that the National Government can take to secure the growing of timber on the private forest lands of the country.

Nothing concrete in a legislative sense came of the hearings, nothing indeed, was expected to with the existing Congress practically in its last gasp. Very early in the next Congress, therefore, both measures were re-introduced, the Snell bill on April 11,[43] the Capper bill on May 2.[44] The new Snell bill was, as to its essential features, a literal copy of the old one.[45] The new Capper bill was considerably revamped.

The principal part of this revamping was in connection with the scheme for direct federal control of private lands. The reaction of sound opinion, particularly sound legal opinion, was so strong as to the unconstitutionality of this proposal that its proponents allowed it to die. In its stead they sought to exercise federal control of private cutting under the tax power. The scheme of legislation by taxation was then newly before the country in the shape of the "Tax on the Employment of Child Labor," or Section 12 of the act

[43] 67 Cong. 1 sess., H. R. 129.

[44] 67 Cong. 1 sess., S. 1435.

[45] A bill practically identical with the revised Snell bill was introduced in the Senate by McCormick, of Illinois, on May 20. 67 Cong. 1 sess., S. 1869.

of February 24, 1919,[46] and by an analogy therewith, it was proposed to bring about the "application of forestry."

The bill provided for the imposition of an "excise tax on the privilege or franchise of conducting the business of harvesting forest crops." Did a lumberman conduct his operations in accordance with the views of its government agency, he would be let off with a mere five cents per thousand feet of lumber cut. If he refused to do so, he would pay five dollars per thousand for the privilege of operating.

Except for the fact that the labor clauses of the original bill were omitted, the new drafting was otherwise, as to essentials, pretty much the same as the old. Farm wood lots were exempt; the penalties for infraction and non-conformance were about the same; coöperative fire protection was provided for as under the Weeks Act, with the restriction to the watersheds of navigable streams removed. The language of the new bill was a shade less militant. Its title this time, for example, was softened into "To control forest devastation, to perpetuate forests in the United States, to raise a revenue from forest products, and for other purposes."

It may be said in a general way that by the time the year 1921 had got well started the question was before the country and was arousing great interest and stirring up argument, which ran the whole gamut from radicalism to the reverse—a gamut-running well illustrated by two bills introduced by Senator King, of Utah,[47] and Representative Tincher, of Kansas,[48] respectively.

The King bill proposed, to repeal the act of February 1, 1905, under which the Forest Service as at present constituted had come into being, and to transfer all the forestal affairs of the country, national forests, and the Forest Service, over to the Department of the Interior, which was thenceforth to have the sole execution of the epochal Section 24 of the act of March 3, 1891.

This bill was introduced November 16. Exactly a month and a day later the Tincher bill proposed the transference to the jurisdiction of the Agriculture Department of all matters pertaining to

[46] 40 Stat. L., 1057, 1138.
[47] 67 Cong., 1 sess., S. 2740.
[48] 67 Cong., 1 sess., H. R. 9599.

public lands of every description. The General Land Office, the National Park Service, the Reclamation Service and the Indian Office were to become Agricultural bureaus. For good measure the Bureau of Fisheries of the Department of Commerce was to be thrown in, Mr. Tincher's idea being that the Agricultural Department should control "all functions of the Government principally affecting agriculture, forestry and food."

It was proposed in the same Congress by the New bill,[49] introduced August 10, and the Curry bills, introduced in the following December,[50] to transfer to the Department of the Interior all forestal powers and duties relating to Alaska. These gestures, however, were rather a part of that Alaskan turmoil which has been the vexation of several presidents, than of the main forestry policy issue. Nevertheless, the motivation behind them did touch that issue in places, and mayhap here and there overlapped a bit. While not of commanding importance as regards our principal theme, it is none the less to be borne in mind in getting that theme's exact perspective.

Apart from the legislative reactions to the question there was manifested about this same time a great deal of practical interest on the part of the general public. The most important manifestation of this interest was the creation of a Committee on National Forestry Policy by the Chamber of Commerce of the United States to hold hearings in all parts of the country and assemble information upon which a national policy might be based. This inquiry received notable attention, particularly attention of a thinking nature, and collected a great deal of valuable information. The work of its subcommittee on forest taxation has already been referred to. The opinion of the testimony presented before it was to the effect that the United States could not afford to allow itself to become dependent upon other countries for its lumber supplies.[51] The Forester addressed the committee upon the occasion of its Chicago sitting in July. He stressed the importance of two things—the

[49] 67 Cong. 1 sess., S. 2382.

[50] 67 Cong. 2 sess., H. R. 9598, H. R. 9687.

[51] An opinion that was given enthusiastic approval by the *Wall Street Journal* of November 30, 1921, in a strong editorial wherein it was stated that reforestation and a lumbering policy were necessities of the hour and were "good business sense."

extension of fire prevention coöperation and the extension of national forests by exchanges and by the incorporation of timbered sections of the public domain. He pointed out that there was no opposition to fire prevention coöperation from any source and that it would accomplish more in practical results than anything that could be undertaken, provided it were extended to all the forest lands of the country and not limited to the headwaters of navigable streams.

At about the same time the Forester addressed the convention of the National Association of Wood Turners, upon which occasion he brought out forcefully the real crux of the forestry problem—idle land. He also exhibited a sane and sympathetic comprehension of our forest history, and an unworried outlook as to our forest future.

After pointing out how the progressive pushing back of "accessibility" to the Pacific Coast had saddled upon the wood-using industries of Chicago and adjacent territory a yearly freight toll on lumber of over $22,000,000,[52] while enough idle forest land existed in Illinois, Indiana, Wisconsin and Michigan to supply in full the yearly needs of those industries, Colonel Greeley went on to say:

It is useless to decry the generous use which American industry has made of our forests. It has contributed powerfully to the industrial development and commercial supremacy of the United States. The forestry problem does not result from the liberal use of our forests, but from our failure to use our forest-growing land. There is an ample area of land in this country, which is not tillable, to support all of our timber requirements, all of our wood manufactures, all of our home building and agricultural use of lumber, indeed an even larger export trade than at present, if that land can be kept at work growing timber.[53] Reforestation has become a commercial necessity in the United States.[54]

Reflection of the movement was noticeable about this time, too, in state forestry legislation designed for a stronger exercise of that

[52] This figure is based on increased haul and not on freight advances.

[53] Col. Graves, in his address to the National Lumber Manufacturers Association in 1919, had been equally opitimistic as to our area of exclusively forest-growing land. We had enough such land, he said, to supply all our needs "for all time."

[54] Department of Agriculture, *Weekly News Letter*, July 27, 1921.

state police power which The Forester had pointed out as the proper instrument for direct local application. Laws governing the disposition of the slash left after lumbering operations were strengthened in several states; Massachusetts, especially, passing a strong law on the subject. New Hampshire and Louisiana passed laws requiring the leaving of at least one seed tree per acre; and the latter state amended its constitution to empower its legislature to pass laws for the conservation of natural resources—the prevention of wasteful use.[55]

A most important study was begun in this year by the Forest Service for the ascertainment of what has come to be commonly referred to as the "minimum requirements" in each forest region of the United States; that is to say, the protective and reforestational measures necessary for the maintenance of a continuous production. The idea back of this study, which was designed to be thorough and to require several years for its completion,[56] was to put the Service in possession of the most accurate data possible for use in the "leadership," which, in the coöperational idea, was designed to be the especial function of the national government.

With the real concern that such things as the United States Chamber of Commerce activities exemplified as the text of a somewhat novel doctrine, the Forester began to preach in the latter part of 1921. This was the proposition that the commanding importance of an adequate and certain lumber supply to American industry, indeed to American economic health, justified, if it did not make imperative, the adoption of a new conception of property rights as regarded the private ownership of forest lands. In other words, because of the long-time nature of timber crops, plus the question as to how future national lumber needs were to be met, the public had an interest in private timberlands not common to ordinary private property; an interest akin to the one it possesses in public utilities. Such an interest, it was held, was abundant

[55] For a summary of the state forestal legislation enacted in 1921, consult Agricultural Department Circular No. 239, "State Forestry Laws of 1921," issued October, 1922.

[56] It was completed early in 1924, and the results attained were given a preliminary discussion at a conference of Service officers at the Madison Laboratory, March 10-22, of that year. A summary of the discussions at that conference in mimeographed form was released by the Forest Service, February 2, 1925.

justification for an extension of public control over private timberlands of a more rigorous nature than that extended to ordinary forms of individual ownership.

This conception, however, was considerably tempered by the declaration that timber production was "an economic process governed by economic laws." [57] With a most refreshing freedom from that over-zeal which has oftentimes hindered true forestal progress in this country, the Forester went on to point out that the requirements to be placed on private owners by police power, national or state, in order to be productive of genuine and long-run good, must needs either be equitable, practicable, and business-like, or else possess compensating feature making compliance a reasonable undertaking. The state or nation, in other words, could insist that forest lands be kept productive, but its insistence would go for naught did it not offer, as a corollary thereto, an equitable doing of its part in the reduction of risk and losses attendant upon that requirement.[58] This assistance was a lessening of the fire hazard and a stabilization of taxation.

It was likewise pointed out that this public interest had another angle. The national obligation to aid in the production of timber on forest lands.

Hearings on the new Snell bill were held by the House Agricultural Committee early in January, 1922, constituting, as it were, an amplification of those of a year before. More time was devoted to them and more extensive and slightly more varied testimony was listened to. Essentially, however, they merely repeated—with emphasis, it is true—the arguments, pro and con, that had been advanced a twelve-month earlier.

A few weeks after the hearings had been concluded, the United States Supreme Court, in the so-called child-labor decision,[59]

[57] Forester, Annual Report, 1921, p. 2.

[58] The head of this same nail was shrewdly hit in the early 90s by the publisher of *The Rural Northwest* of Portland, Oregon. The private owner, he said, might conceivably become the best conserver of the forest if the government would answer this question: "What aid do you propose to give those who produce forests more necessary to the public than to the individual owner?"

[59] Bailey *et al* v. Drexel Furniture Co., 259 U. S. 20. See also Hill *et al* v. Wallace *et al*, 259 U. S. 44, decided the same day, in which the Future Trading Act of August 24, 1921 (42 Stat. L., 187), was held unconstitutional for the same reason.

knocked from under the second Capper bill what few props it possessed. The possibility of federal control of lumbering in all parts of the United States, to the exclusion of local police powers, was disposed of by the Chief Justice Taft when he pointed out that if the child labor law were valid there was nothing to prevent Congress arrogating to itself complete control of any subject of public interest, regardless of whether the states had never parted with jurisdiction thereover, and regardless of whether that jurisdiction was reserved to them by the Tenth Amendment. A detailed measure of "regulation" of the subject enforced by a so-called "tax" upon departures from it would do the trick. "To give such magic to the word 'tax,'" declared Mr. Taft, "would be to break down all Constitutional limitations of the powers of Congress and completely wipe out the sovereignty of the States."

A proposal put forth in a bill introduced a few months after this decision was made[60] is to be noted here for reasons that will more fully develop later on. Under it the territory included in the reservation of Fort Benning, Georgia, was proposed to be set up into a national forest, so far as forestal administration and protection by the Forest Service was concerned. At the same time, however, it was to retain its military status as a regular post for the maintaining and training of armed forces and the holding of military manœuvers.

This scheme was not entirely novel. In the Agricultural appropriation act of August 10, 1912 (37 Stat. L., 269, 286), a proviso attached to the appropriation for Zuni—now Manzano—National Forest, New Mexico, had made the military reservation of Fort Wingate, New Mexico, a part of that forest under practically the arrangement outlined above.[61]

At that time not a great deal of attention was attracted to the proposition, but when the altogether different situation existing after the close of the World War left the government with the training areas on its hands, many, if not most, of them acquired at great expense, it assumed an altogether different proportion.

[60] 67 Cong. 2 sess., S. 3829, July 5, 1922.

[61] The fort was to remain part of the said forest till Executive Order No. 1367, of May 31, 1911, was revoked, modified, or suspended by the President. Meantime, however, the area was to remain subject to the unhampered use of the War Department for military purposes.

Here was seen an answer to the problem of what to do with these areas—an answer that would render their sale at a sacrifice unnecessary, preserve them for future use if need be, protect them from fire and spoliation, and possibly make them sufficient producers of revenue to pay their own way. Forest Service and War Department alike began to give consideration to what was regarded as a by no means unimportant element in permanent national policy, forestal as well as military.

Despite the wholehearted way in which the lumber industry got behind the Snell bill, including that exceedingly mild provision thereof having to do with the regulation of private cutting, no further progress for the measure remains to be recorded. The industry might "not be afraid" of private cutting regulation, according to the words of its spokesman at the hearings, but that fact did not take the point out of the realm of controversy. There remained a deal of bitter opposition to the mere idea. Some of this, though not a great deal apparently, was of the sort we have already noticed—individual lumbermen willing to play the game because the industry as a whole told them to, and to accept the innovation though privately convinced of its injustice and unsoundness.

Recognizing the futility of hanging on to a principle the controversial content of which made questionable the accomplishment of any real progress toward genuine policy legislation, the Forester advised that this point of dispute be thrown overboard and concentration had upon those other points—fire suppression, reforestation, tax reforms, research, etc.—upon which there was no difference of opinion worthy of the name. This was a bold and statesmanlike stroke and probably was the one thing needed to "break the jam" and enable the drive for a policy to get downstream. Its boldness is not detracted from by the fact that the Forester had always recognized and asserted that private cutting was a decidely minor problem among the first-step questions as to how to get a genuine forest policy actually started.[62]

The two bills of Mr. Clarke, of New York, introduced February 6 and 7, respectively, 1923,[63] were, in all main essentials, re-utter-

[62] As practically all leaders of forest thought outside the little group of "keenest minds" had come to do.

[63] 67 Cong. 4 sess., H. R. 14225 and H. R. 14241. They really constituted but one bill, being identical save for the inclusion in the bill last introduced of a paragraph providing for the study of forest taxation and the effects thereof.

ances of the ideas contained in the earlier bills of Mr. Snell—save for the fact that they were silent upon the question of the regulation of private cutting. They both merely "authorized and directed" the Secretary of Agriculture to recommend the "essential requirements in protecting" . . . "from fire," and then covered the usual ground regarding reforestation, research, and the other uncontroversial subjects. They had a little popular emphasis laid upon them by reason of the writing of a letter by President Harding to Mr. Clarke, on the twenty-fourth of the preceding month, warmly commending the bills in particular and the movement for a forestry policy in general.[64]

Nothing of a concrete nature flowed immediately from these Clarke bills. Their big accomplishment consisted of finally getting rid of the one controversial element and clearing the way for definite accomplishment. The time for that had now arrived. The first step therein was taken almost concurrently with the introduction of the Clarke bills.

This was the adoption of a Senate resolution[65] on January 21, 1923, authorizing a committee of that body to investigate the forest problem in all its phases in all parts of the United States.[66] Hearings were begun under this resolution on March 7, in Washington, and were continued from time to time in that city or in some one of the principal forest regions of the country until the following November. The committee visited, among others, the Northeastern pulp region, the turpentine regions of the South, the cut-over lands of the Lake States, the fir region of the Pacific Northwest. Twenty-four hearings were had in all in sixteen states and in the District of Columbia. A great number of witnesses was heard representative of every angle of the forest problem. The committee brought in its report January 10, 1924,[67] after Senator McNary, its chairman, had introduced a bill on December 15, embodying the committee's conclusions as to the legislative measure necessary;[68]

[64] This letter was printed February 7, 1923, as 67 Cong., H. doc. 558.

[65] 67 Cong. 4 sess., S. Res. 398.

[66] An attempt was made in the House toward the appointment of a committee of that branch of Congress to coöperate with the Senate committee. (67 Cong. 4 sess., H. J. Res. 456.) Objection in the Senate frustrated it.

[67] 68 Cong., S. rep. 28.

[68] 68 Cong. 1 sess., S. 1182.

and after Representative Clarke had presented the same bill to the House a few days later.[69]

There was an echo in late 1923 of the investigations made by the National Forestry Policy Committee of the Chamber of Commerce of the United States two years earlier. This was the submission to its membership by the Chamber of its so-called Referendum No. 42, by which an expression was sought of the commercial sentiment throughout the country—so far as that sentiment was represented by membership in the national body—upon the several points constituting the committee's recommendations for a national policy.[70]

Another notable unofficial activity occurring about this same time was the annual meeting of the Western Forestry and Conservation Association held in Portland, Oregon, November 24 and 25, 1923. This meeting was an extraordinary one in that is was largely devoted to a discussion of a permanent policy for the utilization of forest land in general, with somewhat particular reference to governmental acquisition of logged-off land for reforestation purposes under the act of March 20, 1922, and otherwise. The gist of the matter was the condition in which logged-off lands would have to be left to be regarded by the government as satisfactory bases for purchase or exchange. This involved, of course, though in a somewhat roundabout way, the question of the regulation of private cutting, it being obvious that the existence of certain established standards of land condition as a *sine qua non* of governmental purchase might enable the government to wield a compelling cutting-regulation club. No particular objection was manifested to this principle in the abstract; but when a communication on the subject from the Forester was read which seemed to say, in effect, that the private owner would have to leave his cut-over land in a condition the attainment of which would add materially to the cost

[69] 68 Cong. 1 sess., H. R. 4830, January 7, 1924.

[70] The referendum was submitted October 3, 1923, and was adopted as to all of its provisions by a substantial majority a few weeks later. In its main essentials it was about the same as the Snell bills minus the private cutting control feature. It advocated coöperation, research, tax investigation, the acquisition by the government of cut-over areas in navigable stream watersheds, and the reseeding and replanting of such areas. This was the Chamber's first forest conservation referendum. A conservation referendum held in 1916 had specifically excluded the forest.

of logging, and yet get no more for it when he came to trade with the government than if he had not gone to the added expense, considerable uproar developed. In brief, the Forester served notice that he proposed to be a canny trader. Said he, in part:

This question connects itself directly with our national reforestation policy, particularly the extent to which the logger should be required, as a matter of law, to leave cut-over lands in a productive condition. It is my viewpoint, as expressed in another paper prepared for this association, that the reforestation knot must be cut by asserting the right of the public to require that certain essential things be observed in logging practice. The nation and the State should coöperate in maintaining a stable system of fire protection; but neither the nation nor the state can subsidize the practice of forestry by the appraisal of lands acquired for public forests on some basis other than their straight commercial valuation. I believe that the fundamentals of forestry practice, call them "minimum requirements," or what you will, must be met as an obligation running with the land and normally absorbed in the cost of manufacturing timber products—not as an outlay to be reimbursed by public agencies either in connection with land purchases, land exchanges, or any other medium that might be open. . . . But we have got to leave the levels of forest-land values to economic forces. We cannot capitalize into the value of the land the public service which we want that land to render.

The protest against what was referred to as a desire on the part of the Forest Service "to prescribe the rules of the game rather more fully than is good diplomacy and good leadership" eventually subsided before the influence of more temperate counsel that recognized the threat to coöperation in the flare-up, and that knew that it was in coöperation, and that alone, that all hope for a real policy resided. It was felt that the Forester had not been entirely fair to the industry, and that the industry had no greater duty to perform in insuring the future a crop of timber than has any other body of citizens in the nation. "Because the whole thing is necessary, however, we are going to work it out." This was the final word of the convention.

The final legislative effort of the radicals, the final Capper bill, was introduced February 16, 1924.[71] Its title—a still further advance in mildness from the truculence of the original bill of 1920—

[71] 68 Cong. 1 sess., S. 2514.

stated that it aimed "To promote forest conservation, to extend the national forests, to raise a revenue from forest products and for other purposes."

It aimed at the same objectives as its two predecessors, but went about attaining them in more moderate style. Control of private cutting, for instance, was provided for in an alternative scheme of having the states operate under the coöperative scheme. The taxation feature was retained in a slightly altered form. Under the new arrangement good lumbermen as well as bad were to be assessed $5.00 per thousand feet on footage cut; but the good ones were to be taken care of by being given a "bounty" of $4.95.

Late in the following month there were hearings by the Agricultural Committee of the House upon the bill which had been given Senate introduction by Senator McNary, of Oregon, and House introduction by Mr. Clarke, of New York, early in the session.

The subsequent history of this important legislation is easily recorded. The Clarke, or House, bill passed the House April 23, 1924. In the Senate it was substituted for the McNary bill, its exact prototype, as there seemed no chance for the latter to be called up in the closing hours of the session. It was passed by the Senate, unamended, June 6, and was signed by President Coolidge on the following day (43 Stat. L., 653).

The Forester was undoubtedly right in hailing the Clarke-McNary act, as this law has come to be known, as "the greatest step forward in forestry in America since the Weeks Act of 1911." A reading of the bill, and a comparison of it with the Weeks Act shows it to merit even stronger praise than that. This because the law and the circumstances surrounding its enactment bring into being a condition of things which far transcends the merely practical.

Consider it first on its purely practical side. The very first thing it does is to enlarge the possibilities for a thorough coping with that element which the sanest and wisest foresters and woodsmen have for years—and none of them more emphatically than Colonel Greeley [72]—declared to constitute at least 75 per cent of the problem. That element is fire. The Clarke-McNary law brings into

[72] "The forest fire hazard is at least three-fourths of the whole job."—Forester William B. Greeley to Western Forestry and Conservation Association at its Spokane Convention, December, 1920.

measurable view a nation with no forest areas absolutely unprotected against this danger.

Its clauses, aimed at the encouragement of forest-growing by a solution of the tax problem, as well as those designed to foster forest production and protection by the farmers, the owners, as has already been pointed out, of one-third of the potential forest area of the country, are all to the good in a practical sense. So are those providing for the gradual inclusion within national forest areas of those portions of the public domain, and of certain of the governmental reservations,[73] ascertained to be primarily of forest value.

Study of the tax problem has been begun under the provisions of the law in a through-going manner. A forest tax investigation staff, composed of foresters and economists under the direction of Professor Fairchild, of Yale, was organized in New Haven in 1925, and moved to Minnesota, the state chosen for the first field study, in the following year. The technique of the entire investigation has been largely worked out in that state in coöperation with state officers, the State University, the Minnesota Tree Society, and the Lake States Experiment Station; and the actual study of the tax situation in Minnesota has been largely completed. Considerable work has also been done in Wisconsin and Michigan, and the entire Lake States region is expected to be completed by January, 1928. All the typical forest regions of the country will then be similarly covered. The entire work is expected to consume five years.[74]

Of genuine outstanding importance in a practical sense is that extension, by Section 6 of the Clarke-McNary Act, of the like-numbered section of the Weeks Act. It is that not merely because it permits of governmental acquisition of forest lands throughout vastly larger areas, and vastly important areas in a reforestational

[73] Practical results of this part of the law (Sec. 9) came quickly, seventy-five thousand acres of the Fort Benning military reservation being set up into a national forest—with military rights unimpaired—by President Coolidge's proclamation of October, 1924—less than six months after the passage of the law. Early in 1925 similar action was taken with respect to Camp Jackson, S. C., and Camp McClellan, Ala., which became Jackson Forest and McClellan Forest, respectively. Several other camps, forts, and ranges have since been forestized under this act.

[74] For discussion of the scope of the work proposed under the study, see "Forest taxation," by F. R. Fairchild, in *Scientific Monthly*, May, 1926, pp. 432, 433.

sense, such as the lake states areas, good for nothing but forest growing, and at the very back doors of immense forest-using industries; it is not merely for this eminently practical reason, but because it boldly gets away from the hypocrisy upon which the Weeks Act was necessarily built and gets squarely out in the open, to stand or fall on its merits as a measure designed to enable the people of this country, through the medium of their national organization, ta take direct, practical, and common-sense action looking to the insuring of the future's possession of "a bit of wood over which to hang the tea kettle." It does that by making the limitation on purchase areas "the watersheds of navigable streams"—which means practically anywhere at all—instead of areas about the headwaters of navigable streams, the continued forestation or reforestation of which might be argued to be of benefit to navigation on the lower reaches.

That boldness merits applause not only because it is more honest but also because it is more practical. The reforestation of our great denuded areas, concerning the need for which there can be no question, is a thing that, because of the bigness of the operation and the long-time nature of it, will have to be done by all the people; *i. e.*, by the nation. And this new law at a stroke wipes out the great and apparently insuperable obstacle that has stood in the way of the nation directly at that job.

Only, after all, and as a matter of fact, does it? If the arguments which held down the Weeks Act were valid in 1911, why are they not valid to-day? They were so accepted then, and the writer has never heard of their having been overborne since. It is all very well to say, as did the late Secretary Wallace at the hearings on the Clarke-McNary bill in March, 1924, that

> Since all of these areas will be chosen on the watersheds of navigable streams, and since the flow of navigable rivers will undoubtedly be benefited by such a program, no question appears to be raised as to the constitutional ground of this proposal.

It is submitted, however that it has never been proven that forestation "undoubtedly" benefits the flow of navigable rivers. This is a question for the future and the "constitutional" lawyers.[15]

[15] A bill authorizing the appropriation of a total of $40,000,000 between 1926 and 1935 for the purchase of forest lands under the widened scope afforded by the Clarke-McNary Act was introduced early in the second session of the Sixty-eighth Congress, but failed of passage. 68 Cong. 2 sess., S. 3736.

But the great achievement of the Clarke-McNary Act lies beyond the domain of the practical. It gives the nation at last the real beginning of a genuine forest policy. The nation has at last determined where it wants to go in a forestal sense, and is definitely on the way.[76] And what is the important, hopeful, thing about it all is that this has come about by all elements getting together in the spirit of "should" and of American sportsmanship, and hammering out a system which all, possibly with a little mutual conceding here and there, can get behind and loyally further.

It is true that there has been some rather ill-advised talk since the passage of the law, to the effect that the law is only a compromise, and that loins must now be girded for the "fight" to regulate private cutting.

But that is mere shouting. Bearing in mind what Forester No. 1 had to say about regulation and would-be regulators, compare such talk with the cold dealing with facts that went on at the National Conference on the Utilization of Forest Products, held in Washington on November 19 and 20, 1924; a conference presided over by the Forester. The object of this convention was, roughly, the creation of a national clearing house of facts the observance of which will make our lumber go farther and consequently make our timber last longer;[77] facts such as enable present organized activity in the lumber industry alone for the prevention of waste to aim at the saving of something like $750,000,000 per year.

This brings the story of America's "moving toward order" in her forestal affairs down to 1927. The story of the moving to that

[76] The Clarke-McNary Act authorizes the annual appropriation, for fire protection assistance to the states, and the development of farm forestry, of $2,700,000. The Agricultural appropriation act of February 10, 1925 (43 Stat. L., 822), appropriated $760,000 for these purposes for the fiscal year 1926. This is in addition to the amounts appropriated under the Weeks Act and the regular Forest Service appropriation.

[77] A good start in this direction has been made. With the approval of President Coolidge, The National Committee on Wood Utilization, representing a wide range of wood manufacturers, distributors, and consumers, has been organized, with the Secretary of Commerce as its chairman. It held its first meeting in Washington, May 2, 1925, and took the initial steps to foster a national movement to save timber and eliminate waste by better methods of manufacture and use.

point is ended; but not the moving itself. The attempt has been made in this narrative to get down beneath the landscape gardening of propaganda to the bed rock of "things as they are," and to tell exactly the tale of a particular American development that has been from first to last a cross section of American development in general.[78]

[78] Forest legislation enacted since this was written should be noted:

The Woodruff-McNary Act of April 30, 1928 (Pub. 326—70 Cong.), authorizes appropriations aggregating $8,000,000, to be expended under the provisions of Section 7 of the Weeks Act.

The McSweeney-McNary Act of May 22, 1928 (Pub. 466—70 Cong.), establishes a ten-year program for forest research, which, according to Secretary Jardine, "will enable the department to coöperate with other agencies in a definite and far-reaching program of investigations which will form the basis for a permanent system of forest production and utilization for the entire Nation."

CHAPTER XII

THE FOREST AND AMERICAN HISTORY

An article published in De Bow's review sometime about the beginning of the Pierce Administration bluntly informed the South, where the bulk of the publication's readers resided, that that section had the same right to engage in commerce, fishing, whaling, and ocean carrying as had the North, and that it could do so—" had we the enterprise and energy to enter the field."[1]

The trouble about this wholesome bit of frankness is that while it is the truth, and nothing but the truth, it is not the whole truth. It fails to go back to the beginning of things and to take note of that influence that flung New England seaward and laid the foundations of that sea power that made certain the triumph of the North in the Civil War. That influence was the magnificent pine forest that the Anglo-Saxon found in New England, an immense resource waiting to be converted into wealth and to open up by that conversion myriad other sources of wealth creation; to determine the course of American industry; to mould American character; to direct, in a word, in a far from inconsiderable degree, the course of American history.

It is no mere pretty phase to say that America is a forest nation. It is the literal truth. Forest influences appear at every step—back to the " Pied Cowe " and beyond, when the aromatic roots of the sassafras tree stirred up a host of discoverers who thought a new spice had been found. Gosnold took a load of it back with him in 1602—the first cargo exported from Massachusetts. Truly did Professor Rothrock say, in referring to the early sassafras hunters, in his Michaux lectures in 1889, that " These expeditions collected

[1] Cong. Globe, 32 Cong. 1 sess., Appendix, p. 471. This magazine. " The Commercial Review of the South and West," was published at New Orleans by J. D. B. De Bow, probably the most eminent American Statistician of that day. He was made Superintendent of the Census by Pierce for reasons, it is said, of fitness rather than of politics at the same time that " the obnoxious " Whig, John Wilson, was made Commissioner of the General Land Office.—Nichols, The Democratic machine, 1850-54, p. 191.

the knowledge which aided the early settlers in planting their colonies."

The forest, that is, pointed the way, and with the way pointed it gave a foothold to the basic industry, agriculture. For fine timber in abundance, coupled with inland water transportation, enabled many a settler to pay the cost of clearing his holding with the money derived from the sale of the lumber, putting him "not only into the possession of an estate without expense, but even an estate that is ready to cultivate."[2]

It was to the Middle Colonies and the South that this giving of a flying start to agriculture especially applies, for it was in those regions rather than in New England that soil of richness awaited the plough after the timber had been cut away and the money derived from its sale utilized for the purchase of buildings and implements, stock, and slaves. Besides a rich soil, a mild climate—a combination made to order for the production of lucrative staples after the forest had given, in a manner of speaking, the set-up in business.

Mahan, in his fascinating "Influence of Sea Power upon History," enumerates the sea strain in the English blood as one of the things that sent the early American seaward. The Southerner had that strain as well as the New Englander. But he remained ashore, while his northern kinsman took to deep water. Naturally he did because his fat fields were his treasure chest—unlocked for him by the forest.

The forest was as kind to the men of the North, but in a different way. His was a harsh climate and a soil that, bared of the forest, was rocky and meagre. But the forest was, considering the day, really "inexhaustible." Moreover, it was composed largely of such trees as the man of the South did not possess. The giant mast trees stretched away toward Canada, league upon uncounted league of them. The forest itself was the treasure chest of the New Englander.

And so the New Englander, perforce, put to sea to sell his forest, and that basic venture led him into maritime ventures of every description. Of his spars to Europe, his staves and "boalts" to the West Indies and the Wine Islands, we have already spoken; also of his selling of ships. Then there was sugar; and molasses back to Medford to be made into rum, and fish to the Catholic lands of

[2] *American Husbandry*, I, 113; II, 13, 16-17.

Europe. And rum and iron to the Slave Coast; and slaves to every American land where the sun was hot and the soil rich. And later whaling and the start of New Bedford. And all these sea venturings opened up markets for things to be made—and then to be seaborne to fill the needs of the man whose time was fully occupied with the growing of cotton and tobacco, of rice and indigo. Such men might, and did, have the old viking sea strain dormant within them, but they had not the time or the economic spur to rouse it into action.

Mahan puts it thus, after enumerating all these things that tended to force the New Englander seaward—the sea strain in the blood, climate, and physical conformation of the country:

> Interest in the sea and an intelligent appreciation of the part it played in the public welfare were easily and widely spread; and a motive more influential than care for the public interest was also active, for the abundance of ship-building materials and a relative fewness of other investments made shipping a profitable private interest.[3]

So it came about that there was created a new and hardy breed of seamen that possessed, in addition to the intrepidity and sailor sense of the British mariner, qualities of initiative and resourcefulness that were new to the seven seas; qualities that in pine privateers beneath the Pine-Tree Flag flouted the mighty navy of the Motherland; that won the frigate actions of the War of 1812 and the Naval War with France; that ended the tribute-taking of the Islamic corsairs.

That this new deep-sea breed was no inconsiderable one, we again have the testimony of Mahan, who tells us:

> The extension of American commerce had come to be the wonder of the Mother-country. When the war broke out it was as great as that of England herself at the beginning of the century.
>
> An interesting indication of the number of the seafaring population of North America at that time is given by the statement in Parliament by the First Lord of the Admiralty, that the Navy had lost eighteen thousand of the seamen employed in the last war by not having America!—No inconsiderable loss to a sea power, particularly if carried over to the ranks of the enemy.[4]

[3] Mahan, The influence of sea power upon history, I, 39.
[4] *Ibid.*, I, 334. See also *American Husbandry*, II, 237, 238.

So it was that the South's cause was hopeless from the first. She might have won a dozen Gettysburgs. Still she would have been doomed, for without a navy, her slow throttling was inevitable. And a navy she could not have, because she was not sea-bred. The North was sea-bred. The forest had seen to that. The course American history was to take was laid among the pines of the Merrimac. The spirit of Paul Bunyan placed in America's hands the sword and buckler of empire.

It did more than that. It gave the spirit of empire. It created—or helped mightily to create—a national consciousness; a thinking by the colonists as Americans rather than as transplanted Englishmen. Long before the final breaking was this finding expression, and finding it in forest terms, as when John Adams said, in 1755:

> If we can remove the turbulent Gallicks, our people, according to the exactest calculations, will, in another century, become more numerous than England itself. Should this be the case, since we have, I may say, all the naval stores of the nation in our hands, it will be easy to obtain the mastery of the seas. Then the United forces of all Europe will not be able to subdue us.[5]

Out of the forest came the might of America—wealth and power and men. Or, as the Maine schoolboy of the fifties put it, more eloquently than he dreamed, when asked the products of his state—"lumber, ships, and sailors."

Out of the forest, too, came American independence. For just as that forest exploitation which they could not have avoided if they would, forced the New Englanders overseas, the opportunities which they could not avoid there forced them into manufacturing with all that that implied in the way of competition with the wares of the Motherland. And that could lead to but one result. For, as a pre-Revolutionary writer well said:

> The grand interest of Britain in her colonies is defeated and perverted by their setting up manufactories for sale, a step which, in the natural course of it, if left to itself, must inevitably bring on their independence.[6]

The utlization of the forest was inevitable, if America was to be won from the forest. But utilization just as inevitably meant the

[5] Adams, *Works*, I, 23.
[6] *American Husbandry*, II, 272.

Broad Arrow and the "eating out of substance," and the jangling with the Mother Country about factories and ships. Well might the New Englanders coin Pine-Tree Shillings and fly Pine-Tree Flags. The pine tree put economic legs under them. The pine tree gave them independence.

Yet more than that did the forest give them. It gave them the Great Inexhaustible Legend, which, false though it was in an ultimate sense, was true for the time. True and more than true, for by breeding, as it more than any other one thing did breed, an irreverence for the impossible, it gave wings to the human spirit that were to carry it into realms of initiative, of inventiveness, of dauntless and untiring endeavor that know no Finisterres.

And that spirit created by the forest of the Atlantic, seeking the West and new lands as water seeks the sea, was tempered and hardened in the fierce fires of its struggles with the forest of the back country into the true spirit of America, of America American, with the last vestige of oversea influence sloughed away; that fiercely glowing spirit that carried George Rogers Clarke and his gaunt and ragged soldiery sloshing through the rains to Kaskaskia; that took the flatboatmen down the Mississippi, and the Spaniard be damned! that bred into the true forest-falling soul of the Rail-splitter the power of leadership against the day the spirit of America was to stand its ordeal by battle. The Atlantic forest fitted the Anglo-Saxon to brave and conquer the forests of the West. The forest of the West made him into the American.

All unconsciously, Francis Parkman, in "The Oregon Trail," gives a lightning-vivid picture of the heroism, the dauntlessness, the sacrifice, and the sorrow comprehended in that westering spirit that would not be denied. Passing along the wagon train route to the Northwest in the early forties, he saw, as was natural, frequent evidences by the way of the historic emigration that was going forward over it. Among these he noted, on more that one occasion, such things as highboys and clawfooted tables, obviously of English origin, abandoned, under the pressure of stern necessity, to the sand and sage brush; to warp, crack, and disintegrate under the pitiless sun of the great plains. If you want the story of that trek from frontier to frontier—Massachusetts or Virginia, Kentucky or New York, Ohio or Illinois, Missouri or Minnesota, Iowa, Oregon—here it is. Here is the story of America—the story of the "bold,

adventurous sons," who would not believe that hunger or toil or the tomahawk made the West "impossible." For the impossible these people had no reverence.

Let us spring a half-century across the years at this point and note the impressions of a man of the parent stock seeing America for the first time just three years after Dr. Fernow came to Washington. Ponder these words of his:

> Sixty million people, chiefly of English instincts, who are trained from youth to believe that *nothing is impossible*.[1] don't slink through the centuries like Russian peasantry. They are bound to leave their mark somewhere, and don't you forget it.

Thus did Rudyard Kipling handsomely atone for "spittoons generous as to gape" and "the Great American Nation," etc. He did, that is, if atonement were necessary, which it wasn't. For every word of his criticism was absolutely true—as true as every word of his praise. The latter makes it plain that he comprehended the spirit that lay back of the crudities that he deprecated in the former—even though he may not have realized that comprehension at the moment.

In these random impressions of the uncrowned laureate of the English-speaking peoples—impressions apparently contradictory but actually not at all so—there is tucked away for us a great lesson. The forest influences that have made us, molded us, laid our course for use across the uncharted seas of destiny, have given us, along with the wealth and power and dominion they have made for us, a great problem. That wastefulness, crudity, ruthlessness, unscrupulousness, have not infrequently followed in their train there can be no manner of doubt; any more than there can be any manner of doubt that they have upon sundry occasions made us a sadly undisciplined lot—as the Surveyor General and the Irish Apothecary and Isaac Willard could testify. But are wealth and wantonness the only things that have come to us out of the forest?

Inefficient as our system may have been in certain directions, it has, nevertheless, had great compensating features. Practicality, handiness, adaptibility, resourcefulness, initiative—all these things have been bred in America as in no other nation in history. By what? By just one thing—irreverence for the impossible.

[1] The italics are mine.

But times have changed. We are within sight of the end of those "inexhaustible resources" that bred this irreverence. We are again up against Land's Ends and Finisterres—on the Pacific. What are we going to do about it? Are we going to give way to the evils and steer full tilt into anarchy? Are we going to suppress our splendid irreverence and degenerate into "slinking peasantry"? Or are we, somehow, going to devise a plan that will control the one without killing the other? Are we going to set up a Board Arrow that will protect and perpetuate the thing that has enabled us to be great, and yet at the same time in no wise dull the edge of the American spirit?

We are going to solve our governmental problems as Americans. Discipline and order? Certainly. We are going to have plenty of discipline and order. We have them already. They have always been with us—contradictory as that may sound—even from the remote days of the "right good fighters" and "right good forest-fellers," the "right good improvers, discerners, doers and workers in every kind." Obscured, no doubt, for spaces long or short, by frontier conditions, the philosophy of "should," of sportsmanship, of from-within-the-individual-man-outward, has always been with us.[8] In that philosophy we shall have order with freedom, just as surely as we should have order with tyranny were we to adopt the philosophy of an all-pervading state paternalism. Such a philosophy is no philosophy for a forest race; for a forest race is a race of free men.

Forest influences in American history? They are everyhere, from before the time the "Pied Cowe" sailed to New Hampshire down to this very hour. Out of America's forests came not only America's wealth and power, but America's genius and spirit. Let Americans never forget that that true king of men whose genius and character made America an independent nation was forest

[8] "We all remember the phrase with which Montesquieu surprised his contemporaries when he was describing to them the original lines of the English Constitution:

"'ce beau systeme a eté trouvé dans les bois.'

"The History of those who settled North America began in the forests and on the shores of Holstein and East Frisia far back in days of which we have no native record save in mythology and poetry, in the worship of Wotan and Thunor (Thunder) and Freya and in the ancient lay of Beowulf."—Bryce, The study of American history, 17, 18.

bred. From his boyhood he learned, in that sternest of schools, a frontier wilderness, such things as restraint, decision, command, strategy, observation, diplomacy; there, too, did he gain an infinite understanding of human nature. The forest moulded him into a great soldier, an able administrator, a leader supremely fitted for his great task when the great task came. Again, is it no mere pretty phrase to speak of Washington, the Forester.

And once again, too, do we find in the glowing pages of Parkman such an unconsciously brilliant limning of this very circumstance, so little heeded, that we cannot do better than adopt it for the final word of this narrative.

The time was December, of the year 1753; the place, that Fort Le Boeuf on the upper reaches of the Allegheny that constituted France's first overt step toward that seizure and consolidation of the back country that was to hem in the English to their tenuous Atlantic seaboard strip; that was to make the Mississippi, the Ohio, and the lakes an all-French thoroughfare from New Orleans to Quebec.

There had been a spell of dismal weather, rain and sleet alternating with snow and slush; and the rough log stockade set in its sodden stump-checkered clearing must have been something of a contrast to Versailles, or even Quebec, for Legardeur de Saint-Pierre and his fellow military exiles who constituted, for the nonce, the spear head of a vast policy. Time must have hung a trifle heavy, despite wine and cards and stale gossip from home that trickled in from time to time by the couriers from Canada.

Yet they had one thought to cheer them. Though their plans were going none too well, they knew that they had a compact organization behind them, that they had completely spied out the land, and that their Indian intrigues were proceeding satisfactorily. At any rate, there they were, and, in the most brazen sense of *"j'y suis, j'y reste,"* there they proposed to stay. And a question doubtless frequently asked with much complacence and eloquent Gallic shruggery at mess was, what are the English and the *Bostonnais* going to do about it?

They had their answer "when just after sunset on the eleventh of December a tall youth on horseback came out of the forest."[9]

[9] Parkman, Montcalm and Wolfe, III, 136 *et seq.*

There was a dramatic symbolization in that circumstance, but it was not for mortal eyes to see. The French watching from their rough-hewn ramparts saw but the youth and the horse and the myriad black arms of the forest gaunt and cold against the afterglow. The flaming splendor that strode at the youth's saddlebow they did not see. They saw George Washington, but their eyes were blind to the mighty sipirit of a nation to be that came with him—out of the forest.

BIBLIOGRAPHY[1]

Allen, E. T. America's transition from old forests to new. (In American forests and forest life, Feb.-May, 1923, v. 29: 69-71, 163-68, 235-40, 307-10)

American association for the advancement of science. Message from the President. . . . Memorial upon cultivation of timber and preservation of forests. . . . 1874. 6 p. (43d Cong., 1st sess. Senate Ex. doc. 28) Serial 1580

American forest congress. Proceedings, 1905. . . . Washington, D. C. H. M. Suter publishing company, 1905. 474 p.

National and state forest policy, p. 355-451.

American forests and forest life. Monthly, 1895-date.

This publication started out as the *New Jersey forester.* The name was soon changed to *The Forester,* and under that name was taken over by the American forestry association in Jan. 1898. Its name was later changed to *Forestry and irrigation,* then to *Conservation,* then to *American forestry,* and finally, January, 1924, to *American forests and forest life.*

American husbandry; containing an account of the soil, climate, production, and agriculture of the British colonies in North America . . . by an American. London, J. Bew, 1775. 2 v.

American paper and pulp association. Committee on forest conservation. Suggestions for a national forest policy. . . . New York? no publisher. 1919. 8 p.

American reforestation association. Comprehensive nationwide plan for conservation and reforestation . . . Los Angeles, American reforestation association. 1923. 46 p.

American society of civil engineers. Committee on floods and flood prevention. Final report. (In *American society* of *civil engineers,* Transactions, Dec. 1917, v. 81: 1218-1310) (Paper no. 1400)

American tree association. National program of forest research by E. H. Clapp and others. Washington, D. C. American tree assoc. 1926. 232 p.

Research agencies.

Ammons, E. M. Forest reservations. 18 p. (61st Cong., Senate doc. 659) Serial 5660

A criticism of the system of control over forest reserves, and of their administration.

[1] Prepared by Sophy H. Powell.

Ancona, E. P. Forest ranger receives a compliment. (In North woods, Oct. 1921, v. 7, no. 28: 5-8)

Anderson, Mark. Politics and science as affecting public land management. (In Journal of forestry, Nov. 1927, v. 25: 889-92)

Application of new knowledge of industry. (In Chemical age, Jan. 1922, v. 30: 15-16)

On Forest products laboratory.

Ashe, W. W. Creation of the Eastern national forests. (In American forestry, Sept. 1922, v. 28: 521-25)

Authier, G. F. Both sides of the range controversy. (In American forests and forest life, Dec. 1925, v. 31: 715-17)

Ayres, P. W. Charles Lathrop Pack demonstration forests. (In Review of reviews, May 1927, v. 75: 513-15)

—— Tackling the forestry problem in time. (In Review of reviews, July 1922, v. 66: 73-76)

Baker, H. P. Afforestation and paper making. (In Paper, Feb. 15, 1922, v. 29:-13-14)

The point of view of paper manufacturers toward government's forest policy.

—— Forest problems of the country and manner in which they may be solved. (In Paper trade journal, July 26, 1923, v. 77: 38+)

—— Forests and the future of American industries. (In Australian forestry journal, Nov. 1923, v. 6: 301-05)

Baldwin, H. I. Preservation of natural areas. (In Science, Apr. 29, 1927, n. s. v. 65: 423-24)

Barnes, W. C. United States Forest service. (In Out-West, Aug. 1908, v. 29: no. 2: 89-109)

Bates, C. G. Planting in the national forests. (In Scientific monthly, Dec. 1923, v. 17: 609-16)

Baum, A. M. Young man, forestry and the forest service. (In Forestry Kaimin, University of Montana, 1922, v. 4: no. 1: 16-17, 30-31)

Bazeley, W. A. L. State policy in forestry. (In Scientific monthly, Apr. 1923, v. 16: 362-67)

Beaman, D. C. National forests and the Forest service. Albuquerque, N. M. No publisher. 1908. 20 p.

Attack on Forest service.

—— Abuses of the forest reserve system as at present administered. Denver, Colorado, no publisher. 1907. 16 p.

Belknap, Jeremy. The foresters. . . . Boston. I. Thomas and E. T. Andrews [printers]. 1792. 216 p.

Historical allegory, showing contemporary relations of the United States with England and France.

—— History of New Hampshire. Boston, Bradford and Read. 1813. 3 v.

Berry, J. B. Farm woodlands. Yonkers-on-Hudson, New York, World book company, 1923. 425 p.

Forest situation in the United States, p. 91-120.

Beveridge, A. J. National forest service. . . . Washington, No publisher. 1907. 33 p.

Bishop, L. L. Allegheny national forest. (In Forest leaves, June 1922, v. 18: 139-41)

Black, R. L. Forest service. (In Outlook, Aug. 26, 1905, v. 80: 1020-28)

Blanchard, C. J. Mutual relations of the Forest service and the Reclamation service. (In Forestry and irrigation, Jan. 1906, v. 12: 42-3)

Blodgett, J. W. Reforestation and timber conservation. (In Mechanical engineering, Feb. 1924, v. 46: 59-63+)

Boerker, R. H. D. Our national forests, a short popular account of the work of the United States forest service on the national forests. New York, Macmillan company, 1918. 238 p.

Brown, N. C. American lumber industry. . . . New York, John Wiley and sons, 1923. 279 p.

Forest service, p. 261-62.

Brown, Ralph. Acquisition of land in the White mountains, under the Weeks laws. (In Empire forester, 1916, v. 2: 11-17)

Bryan, J. W. Proposed investigation of the Forest service . . . [speech in Congress]. Washington, no publisher. 1913. 32 p.

Burdon, E. R. Report on a visit to the United States and Canada for the purpose of studying . . . forestry departments. . . . Cambridge, University press, 1912. 24 p.

—— Development of research work in timber and forest products. (In Royal society of arts, Journal, Mar. 7, 1913, v. 61: 438-48)

Burns, Findley. Publications of the Forest service, classified for teachers and students. (In School science and mathematics, Nov. 1918, v. 18: 716-22)

Butler, O. M. Shall the stockmen control the national forests? (In American forests and forest life, Sept. 1925, v. 31: 519-22, 574)

Cabinet officers disapprove Stanfield grazing bill. (In American forests and forest life, March 1926, v. 32: 149-50)

Calkins, M. C. Clarke forestry law. (In Journal of land and public utility economics, Jan. 1925, v. 1: 126-28)

Canada. Interior department. Forestry branch. Historical sketch of Canada's timber industry, by James Lawler, Ottawa. 1922. 12 p. (Circular 15)

Carter, C. F. Our reforestation activities. (In Scientific American, Dec. 1921, v. 125A: 106-07)

Cary, A. Ideas on national forest policy. (In Journal of forestry. Nov. 1922, v. 20: 788-94)

Cavanaugh, C. F. Making the most of our forests. (In New age, Sept. 1910, v. 13: 288-38)

Chamber of commerce of the United States. National resources production dept. Forest research, a national undertaking. Washington, D. C., 1927. 13 pp.

McSweeney-McNary bill.

Chandler, B. A. Forestry and the pulp and paper industry of the Northeast. (In Journal of forestry, Apr. 1924, v. 22: 399-402)

Chapman, H. H. Grazing menace on our national forests. (In American forests and forest life, Feb. 1926, v. 32: 85-88)

Chittenden, H. M. Forests and reservoirs in relation to stream flow with particular reference to navigable rivers. (In *American Society of civil engineers,* Proceedings, Sept. 1908, v. 34: 924-97)

Clapp, E. H. and Boyce, C. W. How the United States can meet its present and future pulp wood requiremeents. . . . 1924. 100 p. (United States agriculture dept. Bulletin 1241)

Cleveland, Treadwell. National forest work and the South, what the government is doing to promote conservative lumbering. (In Southern lumberman, Dec. 25, 1906, v. 51: no. 603: 52-4)

Cline, M. B. Wood utilization. (In Packages, June 1908, v. 11: no. 6: 41-8)

—— Forest service and its work. (In Southern lumberman, Jan. 23, 1909, v. 58: no. 696: 34-5)

Colonel Graves on the Snell bill. (In American forestry, Mar. 1922, v. 28: 179-80)

Cooper, A. W. Work of the Forest service. (In Water and forest, Jan. 1907, v. 6: no. 4: 9-11)

Cox, W. T. and Cornwall, G. M. Policy of Forest service in selling timber and fixing stumpage prices. (In American lumberman, Aug. 21, 1909, no. 1787: 35-6)

Crissey, Forrest. Working to save wood waste. (In Saturday evening post, Feb. 3 and 17, 1912, v. 184: no. 32: 8-10; no. 34: 30)

Crossman, E. C. Matter of conservation. (In Outlook, June 27, 1923, v. 134: 276-78)

Crump, Irving. Boys' book of forest rangers. New York, Dodd, Mead and company, 1924. 253 p.

De Boer, S. R. Against transfer; Forest service should remain where it is. (In Parks and recreation, Jan.-Feb. 1922, v. 5: no. 3: 227-30)

Decade of progress in the Forest service. (In American forestry, Mar. 1920, v. 26; 131-32)

Decennial celebration of Forest products laboratory. (In Chemical and metallurgical engineering, Aug. 18, 1920, v. 23: 270-72)

Defebaugh, J. E. Appalachian forest reserves; a consideration of some features of the forest reserve policy of the United States.

Chicago, Association of commerce. 1908. 13 p.
—— History of the lumber industry of America. Chicago. American lumberman, 1906-1907. 2 v.
Denver, Colorado. Chamber of Commerce and Board of trade, Committee on forestry. Report [with resolution of commendation of U. S. forest service]. Denver, no publisher. 1909. 13 p.
Dillon, Richard. Comes now the plaintiff. (In Producer, Apr. 1924, v. 5:5-9)

A criticism of Forest service policy toward grazing charges and privileges.

Eddy, J. A. Forest service operating the forest reserves, as it affects welfare of the people. Denver, Colorado, no publisher. 1909. 28 p.

Attack on administration of Forest service.

Facts on the Clarke-McNary forestry act. (In Railway review, Apr. 18, 1925, v. 76:737)
Fernow, B. E. Economics of forestry. . . . New York, T. Y. Crowell and company, 1902. 520 p.
—— Forestry in the U. S. department of agriculture during period 1877-1898. 1899. 44 p.

Reprinted from House doc. 181, 55th Cong., 3d sess. Serial 3813.

—— Need of a forest administration for the United States. . . . Salem, Mass. Salem press publishing and printing company, 1889. 359-366 p.
—— Situation [what has been accomplished in forestry as a policy, a science, and an art]. (In Journal of forestry, Jan. 1917, v. 15:3-14)
Fight for Alaska's forests. (In American forestry, April 1922, v. 28:201-06)

Discussion of proposal to transfer national forests to Interior department.

Fiske, John. Dutch and Quaker colonies in America. Boston, Houghton Mifflin and company, 1900. 2 v.
—— Old Virginia and her neighbors. Boston, Houghton, Mifflin and company, 1898. 2 v.
Forest leaves. Monthly, 1886-date.

Published by the Pennsylvania forestry association.

Forest policy assures greatest timber growth. (In American forests and forest life, Jan. 1922, v. 28:48)
Forest policy—the immediate necessity. (In American forests and forest life, Dec. 1923, v. 29:708)
Forest products laboratory opportunities. (In Paper, Jan. 25, 1922, v. 29:7-9)
Forest products laboratory program and publications. (In Paper trade journal, Aug. 30, 1923, v. 77:45-49)

Forest research council. (In Science, Apr. 11, 1924, n. s. v. 59: 332-33)
Forest service fire prevention plans. (In Timberman, June 1922, v. 23: 142)
Forest service in war times. (In Science, Feb. 7, 1919, n. s. v. 49: 141-42)
Forestry and the federal budget. (In American forests and forest life, Nov. 1925, v. 31: 668)
Forestry quarterly, 1902-1917.
Published in Ithaca, N. Y.

Forests for the nation; recognized severity of forest exhaustion demands speedy extension of national forests in the East. (In American forests and forest life, Feb. 1924, v. 30: 93)
Fox, F. C. Conservation of forests. (In U. S. Bureau of education, 1927: v. 20: 40-58)
Frothingham, E. H. Forest experiment station for the South. (In American forestry, Sept. 1921, v. 27: 598-99)
—— Scientific research and South Appalachian forests. (In Lumber world review, Nov. 10, 1923, v. 45: no. 9: 47-52)
Fullaway, S. V. Forest utilization a public service rendered by U. S. forest service. (In Idaho forester, 1922, v. 4: 11-14)
Forest products laboratory.

Gannett, Henry. Forests of the United States. 1899. 66 p. (Also in U. S. Geological survey, 19th Annual report, 1897-98, Part V)
Garden and forest. Weekly, 1888-1897.
Edited by C. S. Sargent, who made the forestry report for the 10th census.

Gill, Tom. Stanfield grazing bill is dehorned. (In American forests and forest life, Apr. 1926, v. 32: 203-04)
Gilmore, C. L. Federal domination vs. state sovereignty. (In Mining congress journal, Mar. 1927, v. 13: 170-72)
Goodman, R. B. Forest management, the problems of our raw wood supply . . . Marinette, Wisconsin, No publisher. 1927. 52 p.
Grant, J. D. Saving America's primeval redwood forests. (In Overland monthly, Oct. 1924, n. s. v. 82: 435-36)
Graves, H. S. Farmer and the forester. (In Purdue agriculturist, Jan. 1917, v. 11: 11-13)
—— Federal and state responsibilities in forestry. (In American forests and forest life, Nov. 1925, v. 31: 675-77)
—— Federal forestry. (In Science, Nov. 28, 1913, n. s. v. 38: 753-58)
—— Forest service as an organization for national defence. (In Forestry Kaimin, Journal of School of forestry, Montana state university, 1917, v. 3: 52-53)

—— National lumber and forest policy. 1919. 14 p.
—— New menace to forestry; reorganization of Forest service under proposed department of public works. (In American forestry, Oct. 1921, v. 27: 645-47)
—— Policy of forestry for the nation. 1919. 11 p. (United States agriculture dept. Office of the Secretary, Circ. 148)
—— Public action in forestry imperative. (In American forests and forest life, Nov. 1923, v. 26: 666)
—— Public forests and private forestry. (In American forests and forest life, Oct. 1923, v. 29: 613-14)
—— Torch in the timber, it may save the lumberman's property but it destroys the forests of the future. (In Sunset, April 1920, v. 44: no. 4: 37-40)

Reply of chief of Forest service to an attack on the fire prevention policy of the Forest service in March (1920) issue of Sunset.

—— What the government is doing in forestry. (In Paper, Oct. 16, 1912, v 9: no. 5: 15-16, 38)
—— Work of the government in forest products. (In American forestry, July 1910, v. 16: 405-8)
—— and Clapp, E. Policy of the Forest service in regard to co-operation with private owners. (In Timberman, Dec. 1911, v. 13: no. 2: 50-3)
Grazer and the government. (In Outlook, Apr. 14, 1926, v. 142: 556-57)
Grazing legislation. (In Producer, Apr. 1926, v. 7: 17-18)
Grazing on the national forests. (In Producer, Dec. 1925, v.7: 19-20)
Grazing versus forestry. (In Journal of forestry, Apr. 1926, v. 24: 378-411)
Greeley, W. B. Accomplishments of the Forest service in silviculture during the past decade, Feb. 15, 1915. 21 p.

Typewritten.

—— Balancing the forest ledger. (In American forests and forest life, Dec. 1923, v. 29: 709-13)
—— Demands of the national forests for technical work and trained men. (In American forestry, May 1913, v. 19: 326-30)
—— Economic aspects of forestry. (In Journal of land and public utility economics, Apr. 1925, v. 1: 129-37)
—— Economic aspects of our timber supply. (In Scientific monthly, Apr. 1923, v. 16: 352-62)
—— Evolution of forest industries in the United States. (In Western society of engineers, Journal, Jan. 1924, v. 29: 1-12)
—— Fires on the national forests. (In American forestry, Jan. 1922, v. 28: 49-50)

—— Forest management on federal lands. (In Journal of forestry, Mar. 1925, v. 23: 223-35)
—— Forest products research in the United States. (In Lumber world review, Nov. 10, 1923, v. 45: no. 9: 54-56)
—— Grazing administration and charges on the national forests. (In National woolgrower, Feb. 1924, v. 14: 30-31, 44-45)
—— Issue between grazing and forestry. (In World's work, Aug. 1926, v. 52: 447-53)
—— National forestry. (In Cornell university, Proceedings at opening of forestry building, May 15, 1914, p. 5-15)
—— Putting our idle forest acres to work. (In Review of reviews, Feb. 1925, v. 71: 189-92)
—— Recreation in the national forests. (In American review of reviews, July 1924, v. 70: 65-70)
—— Scientific background of the forest policy of the United States. (In Science, May 23, 1924, n. s. v. 59: 449-52)
—— Shall the national forests be abolished? (In Mining congress journal, Aug. 1927, v. 13: 594-97)
—— Stockmen and the national forests. (In Saturday evening post, Nov. 14, 1925, v. 198: 10-11+)
Greene, G. W. Historical view of the American Revolution. 4th edition. Cambridge, Riverside press. 1876. 460 p.
Guthrie, J. D. Forestry awakening in Washington. (In American forestry, Jan. 1922, v. 28: 51)
—— Handling Uncle Sam's forest properties. (In West Coast lumberman, May 1, 1924, v. 45: 61, 64)
—— Then and now. (In American forestry, Jan. 1923, v. 29: 51-52)
Forest fire patrol.
Hagenbarth, F. J. National forest radicals. (In National woolgrower, Dec. 1925, v. 15: 13-14)
Hale, E. E. Studies in American colonial life. Meadville, Pa., Chautauqua century press. 1895. 63 p.
Hall, R. C. Federal income tax and forestry. (In Journal of forestry, Oct. 1923, v. 21: 553-62)
Hall W. L. Moving towards a broad forestry policy, also considerations bearing upon a national forestry policy by W. G. Greeley. Chicago, Central states forestry league, 1921. 16 p.
—— Testing laboratory for the Forest service. (In Wagon builder, Sept. 1906, v. 1: no. 6: 11-13)
Hamilton, Alexander (M. D.) "Itinerarium." St. Louis, Privately printed by W. K. Bixby, 1907. 263 p.
Journal of a trip by horse, stage and boat from Annapolis to New England in 1744.

Headley, Roy. Budget and financial control in the national forest service. (In American academy of political and social science, Annals, May 1924, v. 113: 51-56)

Hibbard, B. H. History of the public land policies. New York, Macmillan company, 1924. 591 p.

Bibliography, p. 573-91.

Holmes, J. G. Publicly owned forests and their place in a country wide forestry program. (In Journal of forestry, Feb. 1926, v. 24: 159-65)

Hosmer, R. S. Attitude of the forestry profession toward a national forest policy. (In Journal of forestry, Oct. 1923, v. 21: 543-52)

Hough, F. B. Report upon forestry. From committee appointed to memorialize Congress and the state legislatures regarding cultivation of timber and preservation of forests. Salem, Mass. Salem press, 1878. 14 p.

Howard, G. E. Preliminaries of the Revolution, 1763-1775. New York, Harper brothers, 1915. 359 p. (Volume 8 of The American Nation edited by A. B. Hart)

Hunt, G. M. Relation of the work of the Forest products laboratory to engineering, (In Western society of engineers, Journal, May 5, 1920, v. 25: 312-29)

Investigation of Uncle Sam's ranges. (In American forests and forest life, Oct. 1925, v. 31: 611-12)

Ise, John. United States forest policy. New Haven, Yale university press, 1920. 395 p.

Hostility to national forests, chapters 8-9; work of Forest service, ch. 10

Ivy, T. P. Forestry problems in the United States. Hendersonville, N. C. 1906. 47 p.

Forest service and the civil service, 5-14.

Jones, C. H. Forest products laboratory. (In Chemical and Metallurgical engineering, Dec. 24, 1919, v. 21: 757-64)

Journal of forestry. Monthly numbers of Journal of forestry, 1917-date.

Contains notices of new books on forestry.

Kellogg, R. S. Work of the Forest service which is of special value to the manufacturer. (In Manufacturer, Apr. 15, 1908, v. 20: no. 10: 295-97)

Kinney, J. P. Development of forest law in America. . . . New York, John Wiley and sons, 1917. 254 p.

—— Essentials of American timber law . . . New York, John Wiley and sons, 1917. 179 p.

—— Forest legislation in America prior to Mar. 4, 1789. Ithaca, N. Y. Cornell university, 1916. 358-405 p.

—— Forestry administration on Indian reservations. (In Journal of forestry, Dec. 1921, v. 19: 836-43)

Kirkland, B. P. Efficiency tests applicable to American forestry. (In Journal of forestry, Mar. 1924, v. 22: 258-65)

Knapp, G. L. Other side of conservation. (In North American review, Apr. 1910, v. 191: 465-81)

Criticism of forest policy and of the management of the national forests

Knappen, T. M. Shall our forests be "developed" or renewed? (In World's work, May 1922, v. 44: no. 1: 78-88)

Koehler, Arthur. Properties and uses of wood. New York, McGraw, Hill book company, 1924. 354 p.

Lake, L. N. Guarding our forest empire. (In Travel, Aug. 1925, v. 45: 11-15)

Larger appropriations urged for federal forestry. (In American forest and forest life, Nov. 1925, v. 31: 685)

Levison, J. J. Mission and scope of Forest service and its relation to the coöperate business. . . . (In Packages, Nov. 1905, v. 8: no. 11: 41-42)

Lovejoy, P S. Forests without trees. (In Country gentleman, July 5, 1924, v. 89: 6+)

McNary bill [editorial]. (In American forests and forest life, Feb. 1924, v. 30: 99-100)

Criticism of the McNary bill.

Maddox, R. S. and A. E. Parkings. Our trees and how they serve us. N. Y. C. Scribner's sons, 1925. 180 p.

Maulding, C. V. Research laboratory adopts modern management. (In Industrial management, Feb. 1, 1921, v. 61: 98-102)

Coördination at Forest products laboratory facilitates research.

Mills, M. L. Moulding public opinion to help save our trees. . . . Los Angeles, American reforestation association, 1927. 121 p.

Moore, W. L. Report on the influence of forests on climate and on floods. 1910. 38 p.

Published by U. S. Weather bureau.

Morrow, J. B. Planks for posterity; something of the mighty task facing Col. Greeley [chief of Forest service]. (In Nation's business, Nov. 1920, v. 8: no. 11: 36-40)

Morse, H. B. Government responsibility in forest regulation. (In Journal of forestry, Mar. 1923, v. 21: 269-72)

Moyer, M. H. Forests or forestry. (In Journal of forestry, May 1925, v. 23: 451-56)

Mulford, W. The Challenge. (In Journal of forestry, Nov. 1925, v. 23: 863-68)

Munns, E. N. Organization and development of Federal experiment stations. (In Association of land grant colleges, Proceedings, 1926: 186-195)

National academy of sciences. Report of a committee upon inauguration of a forestry policy. . . . 1897. 47 p.

National chamber of commerce favors forest action. (In American forests and forest life, Jan. 1924, v. 30: 51)

National forests in danger. (In Agricultural review, Mar. 1926, v. 19: 16-17)

National forests, June 30, 1926. (In United States agriculture dept., Yearbook, 1926: 794-95)

National forests or stockmen's profits? (In Nation, Sept. 23, 1925, v. 121: 321-22)

The new forestry act. (In American forests and forest life, July 1924, v. 30: 392-414)

New Jersey forester. See American forests and forest life.

Newton, C. D. State regulation of cuttings on privately owned lands. (In Journal of forestry, Nov. 1921, v. 19: 707-17)

Nichols, R. F. Democratic machine, 1850-54. New York, Columbia university, 1923. 248 p.

Pack, A. N. Our vanishing forests. New York, Macmillan company, 1923. 189 p.

Describes work of the government in forest preservations.

Pack, C. L. Forest production; words or action! (In Nature magazine, Jan. 1924, v. 3: 27-28)

—— Forest wise nation. (In Reviews of reviews, Oct. 1925, v. 72: 407-10)

—— The forestry primer, 1876. 1926. Washington, D. C. American tree association, 1926. 32 p.

Page, A. W. Statemanship of forestry, the government's method of prepetuating our forests and what it means to the future of the country (In World's work, Jan. 1908, v. 15: 9739-58)

Page, W. H. Gifford Pinchot the awakener of the nation. (In World's work, Mar. 1910, v. 19: 12662-68)

His work as director of Forest service.

Palmer, Frederick. Pinchot's fight for the trees. . . . (In Collier's weekly, Nov. 30, 1907, v. 40: no. 10: 13-14)

Paper industry endorses forestry bill. (In Paper trade journal, Mar. 27, 1924, v. 78: 23-24)

Peters, T. M. Stockman and the federal land. (In Outlook, Apr. 14, 1926, v. 142: 568-69)

Pinchot and the ranger schools. (In Outlook, Feb. 19, 1910, v. 94: 368-69)

Pinchot, Gifford. Blazed trail of forest depletion. (In American forests and forest life, June 1923, v. 29: 323-28+)

—— Chief forester visits Colorado. . . . (In Southern lumberman, Mar. 20, 1909, v. 59: no. 704: 29-30)
—— Federal forest service. (In American forest Congress, Proceedings, 1905: 390-99)
—— and others. Government forestry abroad and practicability of an American forest administration by B. E. Fernow. Baltimore, American economic association. 1891. 101 p.
—— Government's forest policy. (In Cyclopedia of American agriculture, ed. by L. H. Bailey, 1909, v. 4: 152-4)
—— Menace to our forests. (In Scientific American, July 1922, v. 127: 52)

Protest against transfer of Forest service to Interior Department.

—— Spirit of the forest service. (In California forestry, May 1917, v. 1: no. 1: 1)
—— Training of a forester. 3d ed. Philadelphia, J. B. Lippincott company, 1917. 157 p.
Plan for eastern national forests gains strength. (In American forests and forest life, Feb. 1925, v. 31: 105-06)
Pool, R. J. Our American forests, their past, present and future. (In Scientific monthly, Jan. 1927, v. 24: 74-80)
Potter, A. F. Keep the Forest service in the Department of agriculture. (In Producer, Oct. 1921, v. 3: no. 5: 9-10)
Potter, E. L. Stockmen and the forest service. (In Breeder's gazette, Mar. 18, 1926, v. 89: 330+)
—— Takes issues with Colonel Greeley. (In Producer, Dec. 1925, v. 7: 17-18)
Pratt, G. D. Legislative needs in forestry. (In American forests and forest life, Oct. 1926, v. 32: 603-04)
Preston, J. F. and Eldredge, I. F. High spots of modern management plans for the national forests. (In Journal of forestry, Feb. 1923, v. 2: 116-24)
Price, O. W. Government work in forestry. . . . (In Woodcraft, Dec. 1905, v. 4: 135-39)
—— Task of the Forest service. (In Independent, Sept. 2, 1909, v. 67: 537-45)
—— Work of the Bureau of forestry. (In American forest congress, Proceedings, 1905: 355-63)
Puter, S. A. D. Looting of the public domain. Portland, Oregon. Portland printing house, 1908. 494 p.
Report on national park and forest boundaries. (In American forests and forest life, Dec. 1925, v. 31: 768)

With maps.

Revised grazing bill. (In National woolgrowers, Apr. 1926, v. 16: 14-16)

Senate 2584 as amended.

Reynolds, H. A. Town forests, their recreational and economic value, and how to establish and maintain them. Washington, D. C. American tree association, 1925. 55 p.

—— Wanted: a Department of conservation. (In American forests and forest life, May 1924, v. 30: 259-60, 308, 314)

Rhoades, Verne. Federal forest purchases and forest recreation. Chapel Hill, N. C. University of N. C. geological and economic survey. 1924. 8 p.

Richards, Edward. National forests and the Northern Pacific. (In Nation, July 16, 1924, v. 119: 71-73)

Rockwell, R. F. Grazing cattle on the national forest reserve. (In Overland monthly, Feb. 1926, n. s. v. 84: 35-36)

Rue, J. D. Recent developments in forest products research in relation to forestry. (In Journal of forestry, Mar. 1926, v. 24: 237-42)

Sabine, Lorenzo. Bibliographical sketches of the loyalists of the American Revolution. Boston, Little, Brown and company, 1864. 2 v.

Sampson, A. W. Grazing, recreation and game in the forests. (In California countryman, Mar. 1926, v. 12: 5, 27-28)

Sargent, C. S. Report on the forests of North America. 1884. 612 p. (U. S. Census office 10th Census, 1880, census reports, v. 9)

Schoepf, J. D. Travels in the Confederation [1783-1784], translated from the German by A. J. Morrison. Philadelphia, W. J. Campbell, 1911. 2 v.

Scott, J. E. Forests as national playgrounds. (In American forests and forest life, Jan. 1925, v. 31: 25-28, 52-54)

Secretary Jardine's statement upon forest grazing administration. (In National woolgrower, Dec. 1925, v. 15: 25-27)

Senate committee hearings on Stanfield grazing bill. (In National woolgrower, Mar. 1926, v. 16: 13-14)

Sherman, E. A. Forest service and preservation of natural beauty. (In Landscape architecture, Apr. 1916, v. 6: no. 3: 115-119)

—— Laying the specter of unconstitutionality. (In American forests and forest life, May 1924, v. 30: 281)

—— Thirty-five years of national forest growth. (In Journal of forestry, Feb. 1926, v. 24: 129-35)

Simmons, R. E. Work of the Office of wood utilization. (In Barrel and Box, Dec. 1909, v. 14: no. 10: 40D)

Smith, G. A. Attack on the forest service grazing policy. (In Journal of forestry, Feb. 1926, v. 24: 136-40)

Society of American foresters. National program of forest research, prepared by E. H. Clapp. . . . Washington, D. C. pub-

lished by American tree association for Society of American foresters, 1926. 232 p. Forest service, p. 149-157.
Entered also under *American tree association.*

—— Why the McSweeney-McNary forest research bill should become law (Washington, D. C.), 1927. 4 p.
—— Proceedings, 1905-1917. Washington, D. C. The Society, 1905-1917.
Sowing timber crops to save nation's trees. (In Popular mechanics, Aug. 1924, v. 42: 259-62)
Stahl, R. M. Ballinger-Pinchot controversy. Northampton, Mass. Smith college dept. of history, 1926. 69-138 p. (Smith college studies in history, vol. XI, no. 2, Jan. 1926)
Stockmen and the national forests. (In American forests and forest life, Sept. 1925, v. 31: 548)
Stockmen pass resolution to muzzle research. (In American forests and forest life, Mar. 1926, v. 32: 167)
Stockmen submit public land recommendations. (In Producer, Sept. 1925, v. 7: 7-8)
Stockmen would quarter the national forests. (In American forests and forest life, Nov. 1925, v. 31: 667-68)
Strothers, French. Forest conservation becomes a reality. (In World's work, Nov.-Dec. 1925, v. 51: 37-44, 189-90)
Sudworth, G. B. Origin and development of forest work in the United States. (In Michigan political science association, Publications Jan. 1902, v. 4: p. 376-405)
Swain, E. H. F. Australian study of American forestry. . . . Brisbane, A. J. Cumming, government printer, 1918. 138 p.
Taylor, G. R. Problems in the reforestation of watersheds. (In American city, Oct.-Nov. 1922, v. 27: 347-49, 427-31)
Theiss, L. E. Plant trees to serve our children. (In World's work, May 1923, v. 46: 60-68)
Tillotson, C. E. Federal coöperation with the states in protection against forest fires. (In N. Y. state college of forestry, Forest protection conference, 1926: 52-57)
To save the forests from the stockmen. (In Producer, Nov. 1925, v. 7: 16-17)
Toumey, J. W. Look ahead in forestry. (In Cornell countryman, Dec. 1921, v. 19: 75)
—— Recent progress and trends in forestry in the United States. (In Journal of forestry, Jan. 1925, v. 23: 1-9)
—— State's responsibility in the forest program. (In American forests and forest life, Dec. 1921, v. 27: 784-85)
U. S.[1] *Agriculture department.* Brief statutory history of the U. S. department of agriculture by F. G. Caffey. 1916. 26 p.
Forest service, p. 9-13.

[1] All entries under U. S. published by Government printing office, Washington, D. C., unless otherwise specified.

—— —— Education of forest students. . . . Statement of amount of money expended under the direction of the forester in the education of students. 1910. 3 p. (61st Cong., Senate doc. 443) Serial 5658
—— —— . . . Expenditures for national forest administration . . . 1912. 49 p. (62d Cong., House doc. 681) Serial 6326
—— —— Historical sketch of the U. S. department of agriculture. Compiled by C. H. Greathouse. 1907. 97 p.
—— —— Official record. . . . Weekly. 1922-date.

See Forest service in index to annual volumes.

—— —— Report of the Secretary, 1862-date. 1862-date.

See Forest service in index to each volume.

—— —— Report on national forest funds . . . report of contributions on account of cooperative work with the Forest service . . . for year 1918 . . . 14 p. (65th Cong., House doc. 1549) Serial 7584
—— —— Truckee-Carson-Lake Tahoe project. Letter from Secretary of agriculture, transmitting in response to House res. 270, information relating to Truckee-Carson-Lake Tahoe project. 1912. 160 p. (62d Cong. House doc. 451) Serial 6321
—— —— Yearbook, 1894-date. 1895-date.

See index in annual volume.

—— —— *Office of the solicitor.* Laws, decisions, and opinions applicable to the national forests. Revised and compiled by R. F. Feagans. 1916. 151 p.
—— —— *Publications division.* Organization of department, 1901-1913. Published annually.
—— *Bureau of corporations.* Lumber industry. 1913-1914. 3 v.
—— *Congress. Joint committee to investigate Interior department and Forestry service.* Compilation of letters, telegrams, reports, and other documents offered in evidence . . . in the course of the hearings held by the committee Jan. 26-May 28, 1910. 1910. 2 v.
—— —— —— Investigation of Department of interior and Bureau of forestry. Hearings. . . . 1910. 7 v.
—— —— —— Investigation of the Department of interior and of Bureau of forestry. . . . 1911. 13 p. (61st Cong., Senate doc. 710) Serials 5892-5903
—— —— —— Investigation of the Northern Pacific Railroad land grants. March, 1925. (Includes hearings held in 1924 on same subject by Public Lands committees on House and Senate) 2 parts and supplement published up to June 1925. To comprise 8 to 10 parts when complete.

—— —— *House. Committee on agriculture.* Acquisition of forest lands, report to accompany H. R. 271 [for protection of watersheds, of navigable streams and to appoint commission for acquisition of lands for purpose of conserving navigability of navigable rivers. . . . 1926. 4 p. (69th Cong., House rept. 431) Serial 8532

—— —— —— —— Agricultural appropriation bill. Hearings, 1904-1922. 1902-1921.

See Forest service in index to each volume.

—— —— —— —— Appalachian forest reserve . . . Report [To accompany H. R. 19573]. 1906. 21 p. (59th Cong., 1st sess. House rept. 4399) Serial 4908

—— —— —— —— Authorizing Secretary of agriculture to cooperate with territories in supervision and extension of forests report to accompany H. J. Res. 52. . . . 1926. 3 p. (69th Cong., House rept. 434) Serial 8532

—— —— —— —— Authorizing Secretary of agriculture to coöperate with territories in promoting continuous production of timber, report to accompany S. J. Res. 37 [so as to provide for protection of forest lands, for reforestation of denuded areas, for extension of national forests and for other purposes. 1926. 3 p. (69th Cong., House rept. 778) Serial 8533

—— —— —— —— Creation of game refuges in Ozark national forest, Ark., report to accompany H. R. 12192. . . . 1925. 2 p. (68th Cong., House rept. 1438) Serial 8391

—— —— —— —— Exchange of forest lands. Hearings on H. R. 10679, H. R. 10680, H. R. 10681. Jan. 6, 22, 1925. 1925. 9 p. Serial Y, 2 pts.

—— —— —— —— Forestry. Hearings . . . on H. R. 15327 Jan. 26 and 27, 1921. 1921. 58 p.

—— —— —— —— Forestry. Hearings . . . Jan. 9, 10, 11, 12, 1922. 1922. 266 p. Serial K

—— —— —— —— Hearings on S. 2424 and S. J. R. 169 [Grazing fees] Feb. 24 and 26, 1925. 1925. 56 p. Serial FF

—— —— —— —— Hearings . . . on bills having for their object the acquisition of forest and other lands. . . . 1909. 143 p.

—— —— —— —— McNary-Woodruff bill. Hearings . . . on H. R. 271 authorizing . . . any state to coöperate with any other state or states or with United States for protection of watersheds of navigable streams and to appoint commission for acquisition of lands for purpose of conserving navigability of navigable rivers. . . . 1926. 53 p. Serial H

—— —— —— —— . . . Protection of forest lands. . . . Report (to accompany H. R. 4830). 1924. 8 p. (68th Cong., House rept. 439) Serial 8228

—— —— —— —— Purchase of forest lands. Hearings, Jan. 13-14, 1922. 1922. 58 p. Serial N

—— —— —— —— Recommendations of Secretary of agriculture. Hearings, Mar. 2, 1922. 33 p.

(Legal status of bureaus of Department of agriculture, Forest service, p. 8-9).

—— —— —— —— Reforestation act amendments. Hearings . . . Feb. 24, 1925. 1925. 41 p. Serial EE

—— —— —— —— Reforestation. Hearings . . . H. R. 4830, a bill to provide for the protection of forest lands, for reforestation of denuded areas. . . . Mar. 25-27, 1924. 1924. 98 p.

—— —— —— —— . . . Report to accompany H. R. 9039 [to enable any state to cooperate with any other state or with the United States for protection of watersheds of navigable streams and to appoint commission for acquisition of lands for purpose of conserving navigability of navigable rivers, relative to payment of lands acquired by condemnation proceedings]. 1926. 2 p. (69th Cong., House rept. 460) Serial 8532

—— —— —— —— Report to accompany S. 3108, to amend sec. 2 of act, as amended [for protection of forest lands, for reforestation of denuded areas, for extension of national forests, in order to promote continuous production of timber on lands suitable therefor, relating to protection from forest fires]. 1926. 3 p. (69th Cong., House rept. 777) Serial 8533

—— —— —— —— Safeguarding national forests. Hearings . . . on H. R. 4070, to provide coöperation to safeguard endangered agricultural and municipal interests and to protect forest cover on Santa Barbara, San Bernardino and Cleveland national forests from destruction by fire. . . . Jan. 16 and 18, 1926. 91 p. Serial D

—— —— —— *Committee on appropriations.* Agricultural appropriation bill, 1923-date. Hearings . . . 1922-date.

See Forest service in index. Hearings for previous years were held before House committee on agriculture.

—— —— —— *Committee on expenditures in Department of agriculture.* Forest service. 1910. 27 p.

—— —— —— —— Report . . . 1907. 64 p. (59th Cong., 2d sess. House rept. 8147) Serial 5065

Forest service, p. 13-19.

—— —— —— *Committee on judiciary.* . . . Power of federal government to acquire lands for national forest purposes. . . . 1908. 42 p. (60th Cong., House rept. 1514) Serial 5226

—— —— —— *Committee on public lands.* Additions to Oregon, Siuslaw and Crater national forests, Oregon. 1910. 11 p. (66th Cong., 1st sess. House rept. 425) Serial 7593

—— —— —— —— Cultivation of timber and the preservation of forests. 1874. 119 p. (43d Cong., 1st sess. House rept. 259) Serial 1623

—— —— —— —— Forest reserve administration . . . report on . . . bill to transfer certain forest reserves to the control of Department of agriculture. . . . 1902. 15. (57th Cong., 1st sess. House rept. 968) Serial 4402

—— —— —— —— Same. Views of minority. 7 p.

—— —— —— —— General forest exchange bill. Hearings . . . H. R. 9539, a bill for the consolidation of forest lands within the national forests. 1920. 137 p.

—— —— —— —— Hearings on H. J. R. 58, H. R. 9814, and H. R. 10058 [Oregon and California railroad grants]. 1916. 10 pts. 645 p.

—— —— —— —— Hearings on H. R. 20683 and H. R. 21894 [national forests and Arkansas] May 18, 20, 21, 23, 24, 1910. 1910. 194 p.

—— —— —— —— Hearings on H. R. 22002 [Oregon and California land grants] April 2 and May 2, 6, 8 and 25, 1912. 172 p.

—— —— —— —— Hearings on S. 5539, a bill to consolidate forest lands. 1917. 37 p.

—— —— —— —— Public forest reservations. 1893. 5 p. (53d Cong., 1st sess. House rept. 78) Serial 3157

—— —— —— —— Public forest reservations. 1894. 23 p. (53d Cong., 2d sess. House rept. 897) Serial 3271

—— —— —— —— Public forest reservations. . . . 1896. 20 p. (54th Cong., 1st sess. House rept. 1593) Serial 3462

—— —— —— *Committee on rules.* Ballinger reports. 1911. 29 p. 61st Cong., 3d sess. House rept. 2102) Serial 5852

—— —— *Senate.* New forest reservations . . . letters and memorials relating to new forest reservations 1897. 11 p. (55th Cong., 1st sess. Senate doc. 68) Senate 3562

—— —— —— *Committee on agriculture and forestry. Acquisition* of dams in Minnesota national forests. Hearing . . . on H. R. 292, Apr. 24, 1926. 1926. 3 p.

—— —— —— —— Agriculture appropriation bill, 1905-1922. Hearings. . . . 1904-1921.

See Forest service in index to each volume.

—— —— —— —— Dams in Minnesota national forest, report to accompany M. R. 292. . . . 1926. 3 p. (69th Cong., Senate rept. 655) Serial 8525

—— —— —— —— Fire protection in Santa Barbara, Angeles, San Bernardino and Cleveland national forests. Hearings . . . on S. 574, to provide coöperation to safeguard endangered agricultural and municpal interests and to protect forest cover on Santa Barbara, Angeles, San Bernardino and Cleveland national forests from destruction by fire. 1926. 68 p.

—— —— —— —— Forest experimental station. Hearings . . . on S. 824, a bill to establish and maintain a forest experiment station in the State of Florida and on S. 1667 a bill to authorize the purchase of lands in Florida for an experimental and demonstration forest for production of Naval stores. Mar. 18, 1924. 1924. 8 p.

—— —— —— —— Game sanctuaries in national forests, report to accompany S. 1147. . . . 1926. 3 p. (69th Cong., Senate rept. 886) Serial 8526

—— —— —— —— Navigability of navigable rivers. Hearings on H. R. 9039, to amend sec. 8 of act to enable any state to coöperate with any other state or states or with United States for protection of watersheds of navigable streams. . . . 1926. 2 p.

—— —— —— —— Protection and promotion of forest lands, report to accompany S. J. Res. 37. . . . 1926. 2 p. (69th Cong., Senate rept. 328) Serial 8524

—— —— —— —— Protection of watersheds of navigable streams, and conserving navigability of navigable rivers, report to accompany S. 3663. . . . . 1925. 3 p. (68th Cong., Senate rept. 1064) Serial 8388

—— —— —— —— Protection of watersheds of navigable streams, Hearings . . . on S. 718, authorizing appropriation to be expended under provisions of sec. 7 of act to enable any state to coöperate with any state or states or with United States for protection of watersheds of navigable streams, and to appoint commission for acquisition of lands for purpose of conserving navigability of navigable rivers. . . . 1926. 59 p.

—— —— —— —— Protection of watersheds of navigable streams, report to accompany H. R. 9039. . . . 1926. 2 p. (69th Cong., Senate rept. 618) Serial 8525

—— —— —— —— Protection of watersheds of navigable streams, report to accompany S. 718. . . . 1926. 4 p. (69th Cong., Senate rept. 366) Serial 8524

—— —— —— —— Reforestation. Hearing . . . on S. 1182. . . . 1924. 67 p.

—— —— —— —— Report [on public forest reservations]. 1892. 12 p. (52d Cong., 1st sess. Senate rept. 1002) Serial 2915

—— —— —— —— . . . Report to accompany S. 3108 (to amend sec. 2 of act, as amended, for protection of forest lands, for reforestation of denuded areas, for extension of national forests and for other purposes, in order to promote continous production of timber on lands chiefly suitable therefor relating to protection from forest fires. 1926. 3 p. (69th Cong., Senate rept. 320) Serial 8524

—— —— —— —— Santa Barbara national forest. To safeguard agricultural and municipal interests in Santa Barbara, Angeles, and Cleveland national forests, report to accompany S. 2646. . . . 1926. 3 p. (69th Cong., Senate rept. 368) Serial 8524

—— —— —— *Committee on appropriations.* Agricultural appropriation bill, 1923-date. 1922-date.

See Forest service in index. Hearings for previous years may be found in Senate committee on appropriations for Department of agriculture.

—— —— —— —— Reforestation. Hearing . . . S. 1182, a bill to provide for the protection of forest lands, for the reforestation of denuded areas, for the extension of national forests, and for other purposes. . . . Mar. 28, 1924. 67 p.

—— —— —— *Committee on forest reservations and the protection of game.* Acquiring national forests and Southern Appalachian and White mountains. Report (to accompany S. 4825). 1908. 15 p. (60th Cong., Senate rept. 459) Serial 5219

—— —— —— *Committee on public lands.* Hearings . . . on S. 30, [Oregon and California railroad land grants]. 1916. 19 p.

—— —— —— *Committee on public lands and surveys.* Boundaries to Yellowstone Park, report pursuant to S. Res. 237. 1927. 3 p. (69th Cong., Senate rept. 1714) Serial 8687

—— —— —— —— Grazing facilities on public lands. Hearings on S. 2584, Feb. 15-Mar. 11, 1926. 1926. 632 p.

—— —— —— —— Herrick timber contract. Malheur national forest, Oregon. Hearing . . . on S. Res. 332, a resolution to investigate all matters relating to contract between Fred Herrick and United States forest service, Jan. 28, and Feb. 11, 1927. 1927. 894 p.

A private case, but the hearings contain much information on administration of Forest service.

—— —— —— —— National forests and public domain. Hearings pursuant to S. Res. 347. 1926. 16 pts. 3 vols.

—— —— —— —— National forests and the public domain. Hearings. . . . 2 vols. 1926.

—— —— —— *Committee on reforestation.* Reforestation. Hearing . . . pursuant to S. Res. 398 . . . Mar. 7 and 8, 20, 21, 22, 23, 24 and 26, April 2, 3, 4, 5, and 6, May 8, 9, 10, 11 and 12, Sept. 6, 8, 10, 12, 14 and 17, 1923. 1923. 6 pts.

—— —— —— *Select committee on reforestation.* Reforestation. Hearings . . . Mar. 7, 1923—Nov. 23, 1923.

Eight parts.

—— *Forest products laboratory.* Forest products laboratory: a decennial record, 1910-1920. . . . Madison, Wisc. Democrat printing company, 1921. 196 p.

—— *Forest service.* Annual report of the forester, 1883-date. 1887-date.

The first three reports were printed only in the reports of the Department of agriculture.

—— —— Complete list of forest service publications. 1925. 57 p.

—— —— The country's forests. 1914. 14 p.

—— —— Division of forestry by B. E. Fernow. (In Agriculture dept. Yearbook, 1897: 143-60)

Also published as Agriculture dept. Yearbook separate 111.

—— —— Federal and state forest laws, compiled by G. W. Woodruff. 1904. 250 p.

—— —— Fire prevention and control on national forests. 1913. 20 p.

—— —— First conference on national program of forestry. 1919. 13 leaves.

Mimeographed.

—— —— Forest fire protection by the states, as described by representative men at the Weeks law forest fire conference. 1914. 85 p.

Coöperation with Forest service.

—— —— Forest products laboratory. Madison, Wisconsin. Tracy and Kilgore [printers] 1914. 21 p.

—— —— Forest products laboratory. Madison, Wisconsin. 1922. 47 p.

—— —— Forest products laboratory, supplementing exhibit . . . at Brazil centennial exposition . . . 1922-1923. 1922. 31 p.

—— —— Forest service; what it is and how it deals with forest problems. 1905. 24 p. (Agriculture dept. Forest service, Circ. 36)

—— —— The Forest worker. Bi-monthly, Sept. 1924-date.

Mimeographed.

Much the same material as appears in the Service bulletin in amplified form for general reader.

Evident object is furtherance of cooperative features of new Clarke-McNary act.

—— —— Government forest work. 1922. 47 p. (Agriculture dept. Circ. 211)

—— —— Intermountain district forest statistics. U. S. dept. of agriculture, Forest service. 1925. 64 p.
—— —— Law enforcement on national forests, California district—District 5. 1923. 102 p.
—— —— Same. 1926. 89 p.
—— —— Law enforcement on national forests. California district United States forest service for California. 1920. 107 p.
—— —— National forest areas, 1905-date.
—— —— National forest road law. . . . 1916. 4 p. (64th Cong. House doc. 1336) Serial 7099
—— —— National lumber and forest policy, by H. S. Graves. 1919. 14 p. (Agriculture dept. Office of secretary, Circ. 134)
—— —— Northern Pacific land grant. Reply of the United States department of agriculture Forest service to . . . Northern Pacific railway company. 1924. 327-356 p. Pt. 5 of Hearings on Northern Pacific land grant before House committee on public lands.
—— —— Present needs in national and state forestry by W. B. Greeley. 1927. 8 p.
—— —— Principles and procedure governing the classification and segregation of agricultural and forest lands in the national forests. 1914. 21 p.
—— —— Purchase of land for national forests under act of Mar. 1, 1911, Weeks law. 1924. 15 p. (United States agriculture dept. Circ. 313)
—— —— Purchase of land under the Weeks law in the Southern Appalachian and White mountains. 1911-1921.

Published irregularly.

—— —— Review of Forest service investigations. 1913. 2 v.
—— —— Rules and regulations permitting prospecting, development and utilization of the mineral resources of lands acquired under act of Mar. 1, 1911. 1917. 19 p.
—— —— The service bulletin. Weekly, Nov. 1917-date.

Mimeographed for service officers and employees only. Disseminates service news and discusses service problems and thereby throws light on service activities and organization.

—— —— What national forests mean to intermountain region by F. S. Baker. 1925. 21 p. (United States agriculture dept. Misc. circ. 47)
—— *General Land office.* Annual reports, 1848-date.
—— —— 1850-date. Instructions for making final proof on timber culture entries under act of Congress to encourage the growth of timber of western prairies. 1882. 12 p.
—— —— Instructions to special agents of General land office, appointed to prevent timber depredations and to protect public timber from waste and destruction. 1883. 39 p.

—— —— Preventing depredations on public timber . . . recommending appropriation of one million dollars for preventing depredations on public timber. 1909. 12 p. (60th Cong., Senate doc. 667) Serial 5408
—— —— Regulations governing entries within national forests. 1907. 7 p.
—— —— Rules and regulations governing forest reserves established under section 24 of act Mar. 3, 1891. 1897. 14 p.
—— —— Same. 1898. 16 p.
—— —— Same. 1900. 17 p.
—— *Geological survey.* Annual reports of director, 1880-1905. 1881-1906.
—— —— Forests of Oregon, by Henry Gannett. 1902. 36 p. (Professional paper, no. 4)
—— —— Forests of Washington, by Henry Gannett. 1902. 38 p. (Professional paper, no. 5)
—— —— Summary of forest work, 1899-1900, by Henry Gannett. (In Part 5, p. 1-25, of U. S. Geological survey, Annual report for 1899-1900)
—— —— Survey of forest reserves. Letter . . . relative to survey of public lands that have been designated as forest reserves by executive proclamation, 1897. 16 p. (55th Cong., 2d sess. Senate doc. 47) Serial 3592
—— —— United States geological survey; its origin, development, organization, and operations. 1904. 205 p. (Bulletin, 227, 1904, Series G, Misc. 7)
—— —— *Division of geography and forestry.* All publications.
—— *Interior department.* Annual reports. 1849-date.
—— —— Establishment of forest reservations . . . letter from Secretary of interior transmitting . . . copies of orders of President of Feb. 22, 1897, and copies of papers relating to establishment of forest reservations. 1897. 36 p. (55th Cong., 1st sess. Senate doc. 21) Serial 3590
—— —— Report on Wind Cave and Minnesota national forest reserves. 1909. 20 p.
—— *Laws, statutes, etc.* Compilation of laws and regulations, and decisions thereunder, relating to the creation and administration of public forest reserves. 1900. 64 p.
—— —— Compilation of laws and regulations, and decisions thereunder, relating to establishment of federal forest reserves . . . and the administration thereof. . . . 1903. 122 p.
—— —— Compilation of public timber laws and regulations and decisions thereunder. . . . 1903. 226 p.
—— —— General public acts of Congress [etc.] . . . respecting the sale and distribution of the public lands. Washington. D. C. Gales and Seaton, 1838. 2 v.

—— *National forest reservation commission.* Hayden national forest, Colorado, . . . proposed addition of public lands to Hayden national forest, Colorado. 1926. 4 p. (69th Cong., House doc. 293) Serial 8579

—— —— Payette national forest, Idaho . . . proposed addition to Payette national forest, Idaho. 1926. 4 p. (69th Cong., House doc. 294) Serial 8579

—— —— Program of purchase of eastern national forests under the Weeks law. 1920. 23 p.

—— —— Report, 1911-date.

—— —— Resolutions adopted Jan. 8, 1927, proposing additions of public lands to Challis, Idaho and Sawtooth national forests in Idaho, Missoula and Helena national forests in Montana, Colville national forest in Washington and Wyoming national forest in Wyoming. . . . 1927. 11 p. (69th Cong., House doc. 668) Serial 8739

—— *Navy department.* Annual report of the Secretary of the Navy, 1824-1895. 1825-1896.

—— *President* (Harding) Federal forestry bill. Letter . . . regarding proposed legislation . . . on coöperation between federal government, the states, and owners of timberlands. . . . 1923. 6 p. (67th Cong., House doc. 558) Serial 8215

—— —— (Harrison) Message . . . transmitting report relative to preservation of forests on the public domain. 1890. 4 p. (51st Cong., 1st sess. Senate Ex. doc. 36) Serial 2682

—— —— (Roosevelt) Message . . . read at the 14th irrigation Congress held at Boise, Idaho, from Sept. 3 to 8, . . . 1906. 4 p.

Published also in Forestry and irrigation Sept. 1906, v. 12: 399-401.

—— *Public roads bureau.* Federal legislation providing for Federal aid in highway construction and construction of national forests and trails. . . . 1927. 30 p. (United States agriculture dept., Misc. circ. 105)

—— —— General instructions to resident engineers and superintendents of construction on national forest roads and national park roads. 1926. 33 p.

—— *Solicitor of Department of Agriculture.* Laws, decisions and opinions applicable to national forests. Revised and compiled by R. F. Feagans. 1916. 151 p.

—— *Weather bureau.* Forest and stream flow experiment at Wagon Wheel Gap, Colorado. Final report on completion of second phase of the experiment by C. G. Bates and A. J. Henry, 1928. 79 p. (Supplement 30 to *Monthly Weather review*)

—— —— Stream flow experiment at Wagon Wheel Gap, Colorado. Preliminary report on termination of first stage of experiment by C. G. Bates and A. J. Henry, 1922. 55 p. (Supplement 17 to *Monthly Weather review*)

United States department of agriculture. Forest service. (In American institute of architects. Journal. July 14, 1917. v. 5: 246-48)
United States forest products laboratory. (In Automotive industry. Feb. 10, 1921, v. 44: 255)
Unspoiled country needs protection. (In Orange Judd Illinois farmer, Oct. 15, 1926, v. 74: 612)
Value of the United States Forest service. (In National geographic magazine, Jan. 1909, v. 20: 29-41)
Van Name, W. G. Danger to Crater Lake national park. (In Science, July 23, 1926, n. s. v. 64: 91)
Walker, J. B. Uncle Sam spendthrift. (In Scientific American. Apr. 1926, v. 134: 230-32)
Wallace, H. C. Forestry and our land problem. (In American forests and forest life, Jan. 1923, v. 29: 14-18)
—— Our forest problem. (In California cultivator, Jan. 13, 1923. v. 60: 58)
Watson, R. Sustained annual yield as a national policy of forestry. (In Journal of forestry, Dec. 1921, v. 19: 817-35)
Weiss, H. F. Future war for wood. (In American forests and forest life, Nov. 1923, v. 29: 667-69)
What forest protection means. (In Outlook, Apr. 25, 1923, v. 133: 742-43)
What the forest service does. (In Outlook, Apr. 12 1922, v. 130: 586-88)

Protest against transfer of Forest service to Interior department.

White, S. E. Fight for the forests. . . . (In American magazine, Jan. 1908, v. 65: 252-61)
Whitney, L. Forest service of the United States and its work. (In School science and mathematics, Dec. 1910, v. 10: 814-19)
Winslow, C. P. Efficient forest utilization—a major factor in an effective national forest policy. (In Paper trade journal, Mar. 13, 1924, v. 78: 30-34)
—— Rôle of utilization in a national forest policy. (In Journal of forestry, Mar. 1926, v. 24: 233-36)
Woehlke, W. V. Real forestry at last. (In Sunset magazine, Apr. 1922, v. 48: 16-19)
Woolsey, T. S. American forest regulation. New Haven, Conn. Tuttle, Morehouse and Taylor, 1922, 217 p.

Bibliography

U. S. Agriculture department. General index to agricultural reports of Patent office for . . . years, 1837-1861, and . . . 1862-1876. 1879. 225 p.
—— —— Supplement to General index of agriculture reports . . . for years 1877-1885, inclusive. 1886. 113 p.
—— —— Index to annual reports of the Department of agriculture . . . 1837-93, inclusive. 1896. 252 p.

—— —— Index to yearbooks of U. S. department of agriculture, 1894-1900. 1902. 196 p.
—— —— Same. 1901-1905. 166 p.
—— —— Same. 1906-1910. 146 p.
—— —— Same. 1911-1915. 178 p.
—— —— List of titles of publications of the U. S. department of agriculture, 1840-1901, inclusive. . . . 1902. 216 p.
—— —— List of publications issued since July 1, 1913. (Revised to Dec. 31, 1916) 1917. 114 p.
—— —— List of publications of Department of agriculture for the five years 1889-1893, inclusive. . . . 1894. 42 p.
—— —— List. of publications of United States department of agriculture from Jan. 1901-Dec. 1925, Comp. by M. G. Hunt 1927. 182 p.
—— —— Monthly list of publications, Mar. 1896-date. 1896-date.
—— —— Official record.. . . Weekly. 1922-date.

The official record of the Department of agriculture gives the latest developments in the work of all services and bureaus, as well as the most important articles in periodicals concerning work of the department. Each article is identified by name of service concerned, given after author's name.

—— —— Weekly newsletter, Aug. 13, 1913–Dec. 7, 1921. 1913-1921.
—— —— *Library.* Catalogue of publications relating to forestry in the library of Department of agriculture. 1912. 302 p.

(Agriculture dept. Library, Bulletin 76.) National forests, p. 212-16.

—— *Forest service.* Complete list of Forest service publications 1915. 40 p.

Mimeographed.

—— —— Some books on forestry, in English. 1924. 11 p.

Mimeographed and in library of Forest service, Washington, D. C.

—— —— Supplementary list of forest service publications. Nov. 15, 1915–July 1, 1921. 1921. 13 p.

Mimeographed.

—— *Superintendent of documents.* Forestry . . . 1927. 15 p. (Price list 43—20th ed.)
—— —— List of publications of the agriculture department, 1862-1902. 1904. 623 p.

United States department of agriculture, Forest service. (In American institute of architects, Journal, July 14, 1917, v. 5: 246-48)
United States forest products laboratory. (In Automotive industry, Feb. 10, 1921, v. 44: 255)
Unspoiled country needs protection. (In Orange Judd Illinois farmer, Oct. 15, 1926, v. 74: 612)
Value of the United States Forest service. (In National geographic magazine, Jan. 1909, v. 20: 29-41)
Van Name, W. G. Danger to Crater Lake national park. (In Science, July 23, 1926, n. s. v. 64: 91)
Walker, J. B. Uncle Sam spendthrift. (In Scientific American, Apr. 1926, v. 134: 230-32)
Wallace, H. C. Forestry and our land problem. (In American forests and forest life, Jan. 1923, v. 29: 14-18)
—— Our forest problem. (In California cultivator, Jan. 13, 1923, v. 60: 58)
Watson, R. Sustained annual yield as a national policy of forestry. (In Journal of forestry, Dec. 1921, v. 19: 817-35)
Weiss, H. F. Future war for wood. (In American forests and forest life, Nov. 1923, v. 29: 667-69)
What forest protection means. (In Outlook, Apr. 25, 1923, v. 133: 742-43)
What the forest service does. (In Outlook, Apr. 12 1922, v. 130: 586-88)

Protest against transfer of Forest service to Interior department.

White, S. E. Fight for the forests. . . . (In American magazine, Jan. 1908, v. 65: 252-61)
Whitney, L. Forest service of the United States and its work. (In School science and mathematics, Dec. 1910, v. 10: 814-19)
Winslow, C. P. Efficient forest utilization—a major factor in an effective national forest policy. (In Paper trade journal, Mar. 13, 1924, v. 78: 30-34)
—— Rôle of utilization in a national forest policy. (In Journal of forestry, Mar. 1926, v. 24: 233-36)
Woehlke, W. V. Real forestry at last. (In Sunset magazine, Apr. 1922, v. 48: 16-19)
Woolsey, T. S. American forest regulation. New Haven, Conn. Tuttle, Morehouse and Taylor, 1922, 217 p.

Bibliography

U. S. Agriculture department. General index to agricultural reports of Patent office for . . . years, 1837-1861, and . . . 1862-1876. 1879. 225 p.
—— —— Supplement to General index of agriculture reports . . . for years 1877-1885, inclusive. 1886. 113 p.
—— —— Index to annual reports of the Department of agriculture . . . 1837-93, inclusive. 1896. 252 p.

—— —— Index to yearbooks of U. S. department of agriculture, 1894-1900. 1902. 196 p.
—— —— Same. 1901-1905. 166 p.
—— —— Same. 1906-1910. 146 p.
—— —— Same. 1911-1915. 178 p.
—— —— List of titles of publications of the U. S. department of agriculture, 1840-1901, inclusive. . . . 1902. 216 p.
—— —— List of publications issued since July 1, 1913. (Revised to Dec. 31, 1916) 1917. 114 p.
—— —— List of publications of Department of agriculture for the five years 1889-1893, inclusive. . . . 1894. 42 p.
—— —— List. of publications of United States department of agriculture from Jan. 1901-Dec. 1925, Comp. by M. G. Hunt 1927. 182 p.
—— —— Monthly list of publications, Mar. 1896-date. 1896-date.
—— —— Official record.. . . Weekly. 1922-date.

The official record of the Department of agriculture gives the latest developments in the work of all services and bureaus, as well as the most important articles in periodicals concerning work of the department. Each article is identified by name of service concerned, given after author's name.

—— —— Weekly newsletter, Aug. 13, 1913–Dec. 7, 1921. 1913-1921.
—— —— *Library.* Catalogue of publications relating to forestry in the library of Department of agriculture. 1912. 302 p.

(Agriculture dept. Library, Bulletin 76.) National forests, p. 212-16.

—— *Forest service.* Complete list of Forest service publications 1915. 40 p.

Mimeographed.

—— —— Some books on forestry, in English. 1924. 11 p.

Mimeographed and in library of Forest service, Washington, D. C.

—— —— Supplementary list of forest service publications. Nov. 15, 1915–July 1, 1921. 1921. 13 p.

Mimeographed.

—— *Superintendent of documents.* Forestry . . . 1927. 15 p. (Price list 43—20th ed.)
—— —— List of publications of the agriculture department, 1862-1902. 1904. 623 p.

INDEX

Abbe, Dr. Cleveland L., on relation of forest to climate, 274-75.
Adams, John Quincy, interest of, in naval forest reservations, 36-50.
Administrative use of timber on national forests, by Forest Service, 359-60.
Agricultural claims on forest reserves, provision for, 286.
Alaskan forests, administration of, 370-73; game law in, 373.
American Forestry Association, beginning of, 196.
American Forest Congress, importance of meeting of, in 1905, 235-37; special meeting of, at Department of Agriculture, 193.
American Paper and Pulp Association, request of statement of forestry policy by, 406-07.
Amherst. See *Massachusetts Agricultural College.*
Antiquities, act for preservation of, 249.
Arbor Day, inauguration of, 183-85; spread of, 195.
Army forest control, advocacy of, by Prof. Sargent, 206.
Automobiles. See *Motor transportation.*

Brackenridge, Henry M., as director of first forest experiment station in Florida, 45-49.
British colonial legislation, control of forests by, 19-22.
"Broad arrow," as a symbol of governmental control, 20, 26-27.
Bureau of Corporations, investigation of lumber industry by, 284-86.

Camping facilities in national forests, provision for, 375-76.
Capper bill (1920), proposal for a federal forest commission by, 402; reintroduction of, 415-16.
Capper bill (1924), effect of child labor decision of Supreme Court upon, 420-21; provisions of, 425-26.
Capper resolution (Senate res. 311), report on timber depletion, in response to, 403-05; timber depletion figures called for, by, 400-01.
Chamber of Commerce of the United States, creation of forestry committee by, 417.
Chittenden, Col. Hiram M., on forests and stream flow, 271-74.
Claims contest system, changes in, 281-83.
Clarke bills, movement for forestry policy represented by, 422-23.
Clarke-McNary Act (1924), provisions of, 426-29.
Climate, relation of forests to, 274-75.
Colonial forest control legislation, 14-18, 27.
Colonists, opposition of, to restrictions, as a factor in governmental forest control, 3-5.
Conservation, movement for, 6-7, 245-46, 424-25.
Consolidation of forest work of government by act of 1905, 236-40.
Cornell Forestry School, Dr. Fernow organizes, 210.
Curry bill, proposal of, to turn over Alaskan forest matters to Interior Department, 417.
Cutting of timber on national forests, regulations governing, 361-65.

Decentralization. See *District offices.*
Depredations on national forests, attitude of lumbermen and of Forest Service, 381-400; concomitant of rapid economic development, 7, 101, 158-61; early efforts to prevent, 68-69; first legislation against, 59-60; in Great Lakes region, 132-40; later legislation directed against, 400-01, 402-30.

Diseases of trees, unification of fight against, 321.
District offices, establishment of, 255; extension of, 370.
Donaldson report. See *Public Lands Commission, 1880.*

Eastern mountain forest reservations, proposals for purchase of, 1901-1908, 267-280.
Economic development, effect of forest depredations on, 7, 101, 158-61.
Education in forestry, attempts to encourage, 195-96; by Dr. Fernow's lectures, 200. See also *Schools.*
Eggleston, Nathaniel H., second chief of Forestry Division, 190-91.
Emerson, G. B., Report on trees and shrubs of Massachusetts, 180.
Experiment stations, establishment of, urged, 193; establishment of first, by Brackenridge, 45-49; growth of, 292-94; permanent establishment of, 256-57.
Exploitation, history and results of, 100-18; in Great Lakes region, 132-40; physical and psychological basis of, 1-9, 16, 21-25.

Fairchild, Prof. F. R., in charge of forest tax investigation, 427.
Federal Power Commission, creation of, 300-07.
Fees. See *Grazing fees.*
Fernow, Dr. Bernhard, achievements of, 210-14; appointment of as head of Division of Forestry, 196-201; on lumber industry, 386-91; report of, on forestry work, 211.
Fire fighting, use of Forest Service funds for, 255.
Fire protection, as an opening wedge in preservation of forests, 179-80; organization for, 308-21; state aid in, 379-81; under timber cutting conditions, 361-63.
Floods, cause of. See *Streamflow.*
Forest fires. See *Fire protection.*
Forest homestead act, 1906, effects of, 249.
"Forest lieu," abolishment of, 234; legislation concerning, 233-34.
"Forest lieu" clause in 1897 law, 208-09; in 1922 law, 365-66.
Forest products laboratory, Madison, Wis., establishment of, 262-67; growth of, 287-88; work of, during World War, 289-92.
"Forest reserve special fund," legislation concerning, 243-44.
Forest Service, change of name of Forestry Bureau to, 241; creation of, 1, 189-90; early work of, 190-95; organization of, in 1912, 283-84.
Forestation, beginning of legislation looking toward, 180-89; experiments in, 199; encouragement of private, by tree distribution, 200. See also *Reforestation.*
Forestry Bureau, establishment and organization of, 231-32.
Forestry commissioner, legislative efforts to create, 188-89.
Forestry Division, development of, under Dr. Fernow, 198-201.
Free use of timber on national forests, conditions governing, 359-60.
Frontier, its tendency toward exploitation, 1-6, 7-8, 20, 98-107; objections of, to reservations, 207.
Frontier, Florida, depredations on, 59-60; 68-99.
Frontier of Great Lakes region, effect of wasteful tendencies of, on forests, 122-57.

Game protection, coöperation of Forest Service officers with Biological Survey in, 374-75.
Gannett, Henry, differences of, with Dr. Fernow, on conservation, 214-15; views on inexhaustibility, 8; work on "Forests of United States," by, 215.
General Land Office, control of forested areas of public domain by, even after creation of Forestry Commissioner in Department of Agriculture, 190; coöperation of, with navy timber agents, 60; experiences of timber agents of, in Great Lakes region, 139-57; part of, in forest control, 125-32; 140-41,

161-64, 170-78, 220-21; transfer of forestry duties of, to Agriculture Department, 239-40.
Geological Survey, part of, in forest work, 238.
Graves, Col. H. S., appointment of, as Forester, 1910, 261; resignation of, 401; views of, on timber depredations, 396-401.
Grazing fees, antagonism toward, on part of stock owners, 332-48; inauguration of, on reservations, 241-43.
Great Lakes region, exploitation of forests in, 132-57.
Greeley, Col. W. B., appointment of, as Chief Forester, 401; views of, on national forest administration, 394; on lumber industry, 418; on private ownership of timber lands, 419-20; on the Snell bill, 413-15.

Henry, Prof. Alfred H., opinion of, on relation of forests to climate, 275.
Homestead act. See *Forest homestead act.*
Hough, Dr. Franklin B., appointment of, as first Forestry Commissioner, 189-90.

Immigration as a factor in forest destruction, 7.
Indian Affairs Office, Forest Branch, establishment of, 246-48.
Indian reservation timber lands, legislation concerning, 224-31.
Insects, campaigns against, conducted by Bureau of Plant Industry, 249; protection against, 321; report of Division of Entomology on ravages of forest, 193.
Interior Department, establishment of administrative organization for protection of forest reserves in, 208, 220-21.

King bill, proposal by, to turn Forest Service over to Department of Interior, 416.
Land grant. See *Oregon land grant.*
Law work of Forest Service, transfer of, to Solicitor of Agriculture Department, 280-83.
Legislation concerning Indian reservations, 224-31; reserves, 204-09; controlling sale of timber, 215-18.
Legislation for forest control, beginning of effective, 166, 169-78, 201-09, 233; failure of, in Great Lakes region, 161-64, slow growth of, 14-18, 59-60, 120-32. See also *Colonial forest control legislation; British forest control legislation.*
Lieu. See *"Forest lieu."*
Live oak for navy, first subject of forest control, 28-99.
Lumber, British restrictions on, as a cause of American Revolution, 25, 80; colonial trade in, 11-12, 14, 21; etymological derivation of, 16; legislative control of exports of, 73-74.
Lumber industry, change of attitude on part of, toward forest policy, 381-98; investigation of, by Bureau of Corporations, 284-86.

McNary, Senator. See *Clarke-McNary Act (1924).*
McSweeney-McNary Act (1928), forest research program, 430n.
Madison, Wis., laboratory. See *Forest products laboratory.*
Mahan, Captain A. T., on pioneer influences, 432-34.
Management plans of Forest Service, explanation of, 351-59.
Massachusetts Agricultural College, Dr. Fernow lectures at, 200.
Masts, use of American pines for, 13-14, 22, 26.
Military reservations, use of, as forest reserves, 421-22.
Monuments. See *Antiquities.*
Moore, Dr. Willis L., on forests and streamflow, 273-74.
Morris act, further forest protection provided for, by, 230-231.
Motor transportation, effect of growth of, on road building programs in forest, 325-36.

National Academy of Sciences, appointment of forestry investigation commission by, 206-07.
National Conservation Commission, report on national resources, 246.

National forestry policy committee of Chamber of Commerce of United States, 417, 424.
National forestry program committee (1920), organization of, 407.
National forests, first attempted legislation to create, 201-02; proclamation of by President Cleveland, 207; successful act (of 1891) creating, 204-05.
National monuments. See *Antiquities.*
National Park Service, in Interior Department, independent of Forest Service in Agriculture Department, 247, 248.
Naval stores industry, colonial beginnings of, 12.
"Navigable waterways," conservation of navigability of, as aid to acquisition of forest reserves, 268, 276-80.
Navy, part of, in forestry experimentation, 28-67.
Navy, British, its dependence upon American masts, 13-14, 19, 22.
New bill, proposal of, to turn over Alaskan matters to Interior Department, 417.
North American Conservation Conference, meeting of, 246.

Oregon land grant, policy of Southern Pacific toward, 252-54; legislation concerning, 286-87, 297-300; Supreme Court decision concerning, 296-97.
Oregon timber land frauds, results of, 234-35.

Paddock bill, provisions of, 206.
Personnel, difficulties of maintaining, after World War, 294-96.
Pinchot, Gifford, as head of Forestry Division, 219-20, 222-60; quoted on lumber industry, 392-93; 406, 412-13.
Poindexter, Senator, introduction of bill calling for wood pulp survey, by, 400.
Power. See *Water power.*
Predatory animals, killing of, by Forest Service officers, 374-75.
Protection by enforcement of police power, growth of, 179-80; by special agents, 215-18.
Protection of forests; live-oak exports restricted, 73.
Public lands, protection of timber on, by direct appropriation, 183; by special agents, 215-18.
Public Lands Commission (1880), report of, 203-04.
Public Lands Commission (1903), appointment of, by President Roosevelt, to investigate protection of natural resources, 234-35.
Public lands convention at Denver (1907), condemnation of Forest Service by, 242.

Rachford report, importance of, in settling grazing fee controversy, 340-41; review of, 342-47.
Railroads. See *Oregon land grant.*
Receipts of Forest Service, growth of, 257-60, 331-32; legislation concerning, 243.
Recreational use of national forests, effect of, on forest policies, 328.
Recreational use of forests, provisions for, 375-76.
Reforestation, early attempt at live oak, 36-50; policy toward, on part of Forest Service, 425; study of, by Forest Service, 419.
Research, at experiment stations, 256-57, 292-94; at forest products laboratory, 262-67, 287-92; program of, in recent legislation, 430n.
Reservations, administration of, under Interior Department, 220-21; antagonism in West toward early, 207-08; further provisions for under Clarke-McNary Act, 427-28; legislation for establishment of, 202-03, 204-05; popular reaction against, 244-45; transfer of, from Interior to Agriculture Department, 238-40. See also *National forests.*
Reservations, military use of, as forest reserves, 421-22.
Reservations, naval, 30-99.

Reserves, name of, changed to National forests, 244.
Revenues of Forest Service. See *Receipts of Forest Service.*
Road building program, promotion of, in national forests, 322-31.
Roosevelt, President, interest of, in forestry, 235, 236-37, 251.

Sargent, Prof. C. S., "Report on the forests of North America" by, 194-95.
Sawmill, American beginnings of, 10-12, 101; increased efficiency of, as factor in forest destruction, 7, 103.
Schoepf, Dr., his observations on forests, 17-18.
Schools, forestry, establishment of, 200.
Schurz, Carl., part of, in strengthening governmental control, 170-78.
Senate committee on agriculture and forestry, 196.
Shipbuilding, establishment of colonial, 12.
Snell bill (1922), hearings on, 420; introduction of, 407; opposition to, 422; provisions of, 408-15.
Society of American Foresters, report of committee of, on forest devastation, 393-94.
Southern Pacific Company. See *Oregon land grant.*
Stanfield bill, introduction of, as cure for grazing fee complaints, 342-44.
Stockmen. See *Grazing fees.*
Streamflow, paper of Col. Chittenden on relation of forests to, 271-74; of Dr. Willis L. Moore, on, 273-74; relation of forests to, 268-78, 300.
Streamflow experiment, progress in, 268-78, 300, 367-69.
Stuart, Sir Henry, American edition of his "Planter's guide," 180.
Stumpage, charges for, by Forest Service, 349.
Sudworth, Dr. George B., work of, in Forestry nomenclature, 199.
Tax investigation, beginning of under Clarke-McNary Act, 427.
Technological investigations, 232-33.
"Timber culture law" (of Mar. 3, 1873), origin of, 186-87.
Timber protection on public domain, 215-18.
Timber sales, increase of, under Forest Service, 241; policy of Forest Service, controlling, 350-59.
Tincher bill, proposal of, to turn over all public lands matters to Agricultural Department, 416-17.
Tourists. See *Recreational use of forests.*
Treasury, Solicitor of, powers of, in safeguarding forests, 127-32.
Tree planting. See *Arbor Day; Forestation.*

Utilization of forest products, conference on (1924), 429.

Wagon Wheel Gap, Colorado. See *Streamflow experiment.*
War Department, aid of, to forestry statistics, 191.
Warder, Dr. John A., as Commissioner on forestry to Vienna, 1873, 185; organization of American Forestry Association by, 191.
Water power, use of, in national forests, 300-08.
Weeks Act, amendments to, 308; enactment of, 262, 275-76; enforcement funds for, authorized, 430n. See also *Woodruff-McNary Act.*
Western Forestry and Conservation Association (1923), discussion of a permanent forestry policy by, 424-25.
White, Joseph, forest activities of, in Florida, 32, 38-42, 45-67.
Wood, use of. See *Forest products laboratory.*
Wood pulp survey, bill to authorize, introduced by Senator Poindexter, 400.
Woodruff-McNary Act (1928), appropriations authorized by, for Weeks Act enforcement, 430n.
World War, Forest Service in, 288-91.
"Working circle," explanation of, 351-59.

634.925 C18

a39001 007448593b

634.925

65-1

65-11

96203